TEXTILE TECHNOLOGY DIGEST

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Abstracts

(An explanation of the classification used in the Digest was published in the January (1949) issue (Vol. 6, No. 1) on the page facing the Index to Authors.)

FIBERS A

Rags for use in the manufacture of yarn, flocks and the like. Marbach, Petrie & McNaught Ltd. Indian P. 34 270 (through *J. Sci. Ind. Research (India)*).

Natural fibers A 1

Asbestos fiberizing. Lee C. Pharo (to Johnson's Co.). USP 2 459 240, Jan. 18, 1949.

Asbestos fibers may be loosened, or fiberized, from asbestos masses containing spicules of crude asbestos by a process in which fiberization of both long and short spicules in the masses is substantially complete. A primary set of coarsely corrugated rolls is provided with relatively large interfitting longitudinal ribs and grooves so calibrated to the masses as to fiberize the spicules of longer fibers without injuring them. A further set of rolls are provided with finer ribbing and calibrated to spicules of intermediate fiber length. A still further set of finely corrugated rolls is provided which are calibrated to the spicules containing the shortest fibers in the masses. By proper calibration of the ribs and grooves of the respective sets of rolls to the masses being treated, substantially complete fiberization may be effected. It has been found that the fibers from the short spicules which have normally been discarded do not undesirably affect the spinning qualities of the fiberized masses unless they are present in great quantities, since the cotton added during textile operations will carry a reasonable proportion of short fibers through the spinning operation. Consequently, considerable loss in weight of fiber which would be experienced by withdrawing from the masses spicules of short fibers is avoided and the yield from a given quantity of fiber is increased.

Effect of mechanical processing on the quality of bast fiber flock (cottonia). K. Chr. Menzel. Laborotorium der Bastfaser, G.m.b.H. Fehrbellin. *Melliand Textilber. 29,* 93-5 (Mar. 1948); 131-33 (Apr. 1948).

It is shown that the economic value of cottonia depends on the raw material. The following are recommended: moor-grown hemp, oil flax or bastard flax, and the poorest quality of fiber flax. Chemical disintegration and mechanical processing are discussed in relation to each other, and some experimental data are given.

Process and device for clearing away branches of retted broom straw. Soc. des Textiles Vegetaux. French P. 927 032, Apr. 28, 1947 through *Bull de L'Institut Textile*).

A machine for clearing away the branches of retted broom straw is claimed. It consists of a rotating drum with a channelled surface which has a carding action on the fibers. Paddle wheels, between which rows of water jets are placed, continue the stripping action. A combing device is used to detach the defibered stalks from the drum. A row of water jets directed towards the lower point removes the tow from the drum.

Retting of coconut husks. Part I—Proximate analysis of coconut husk at various stages of retting. N. S. Varier & K. L. Moudgill, Univ. of Travancore. *J. Sci. Ind. Research (India) 6B,* 114-6 (Aug. 1947). Part II—The tensile strength of coir fiber. A. O. Mathai, N. S. Varier & K. L. Moudgill, Central Research Inst., Trivandrum. *Ibid. 7B,* 119-23 (Aug. 1948).

Part I is a report on a study the purpose of which was: (1) to study the chemical changes during retting, (2) to shorten the duration of retting, (3) to improve the quality of fiber, and (4) to find uses for the by-products. Data obtained are presented in 5 tables. Part II. Data were obtained on the tensile strength of coir fibers for the purpose of grading some of the many varieties of coir fibers. An especially built apparatus, used in the tests, is described and illustrated and the experimental procedure given. It was found that the tensile strength of coir fibers varies from locality to locality, and of the samples analyzed, the *Kayamkulam* variety was found to be best. Chemical treatment affects the fiber strength considerably.

Recent advances and future trends in cotton im-

provement. Geo. J. Harrison, U. S. Cotton Field Station, Shafter, Calif. *Cotton Trade J. 28* (International Ed., 1948-49), 154-5.

The development of California cottons is reviewed briefly, and data are given on the characteristics of a new strain, Acala 4-42. A program is now underway to transfer the fiber properties of this strain to other cottons because its small bolls and low lint per cent preclude its production under present economic conditions.

Relations of cotton fibers to mill machinery. Burt Johnson, Natl. Cotton Council of Am. *Cotton Trade J. 28* (International Ed., 1948-49), 146-7, 150, 162.

The efforts of fiber technicians to learn more about cotton fibers and their behavior in processing are discussed. The many variables to be considered in these studies are noted. It is concluded that laboratory cotton fiber tests, as now conducted, offer insufficient basis for predicting what will happen to the fiber in the mill; the fiber technician must devise means of measuring the relations of the fibers to each other and to trash in the sample if he is to predict successfully how the fiber will process. Fiber properties that are demonstratively related to yarn qualities are not necessarily positively associated with that phenomenon often referred to as a "smooth running mill."

Disintegration of bast fiber plants with water and steam. Max Ludtke. *Melliand Textilber. 29*, 199-202 (June, 1948); *in German.*

Methods of producing fibers from flax, developed during the last 100 yrs., are reviewed, and 46 references are cited. Disintegration with water does not attack the middle layers of the stalk and produces a long fiber which is generally coarser and firmer than retted fiber. It may be possible to apply the process to oil flax straw and to other bast fibers.

Flax straw. Anon. *L'Industrie Textile* No. 739, 176 (June, 1948; *in French* (through *Bull. L'Institut Textile*)).

A process has been discovered by means of which flax straw can be used to make fibers and linen thread. The adhesive material in the fibers is removed chemically.

Large scale development of the aerated retting process in Great Britain. M. Gibson, H. M. Norfolk Flax Establishment. *J. Soc. Chem. Industry 67*, 337-41 (Sept. 1948).

Aerated retting is carried out in H. M. Norfolk Flax Establishment in five 27,740-gallon concrete tanks, with a maximum air input of 500 cu. ft. per

minute. Air diffusers of alundum and of perforated asbestos were tried but abandoned in favor of perforated and slotted pipes which provided easier cleaning and maintenance. Temperatures are maintained near 30°C by injecting steam into the air line. Newer installations will be heated by coils and insulated for heat economy in year-round operation. During operation, the initial fermentation of the flax charge is anaerobic, producing organic acids. As air is supplied, aerobic coliform bacteria oxidize these acids, permitting the pH to be kept within the optimum range of 6.0-7.0. Acidity is carefully controlled during retting by air flow control. Each tank at Norfolk normally requires 40-50 cu. ft. free air per minute to end up at a pH of 7.0. The retting liquor can be reused indefinitely, with periodic sludge removal; impurities build up to a steady level at which they are removed by dragout and sludging as fast as formed. Though the flax becomes darker for the first few rets in a series, its quality consistently equals that produced by the Duplex and Belgian anaerobic processes. The aerated retting liquor after several weeks of use contains about 0.6% solids, half of which are organic, and has a biochemical oxygen demand 2-3 times that of the waste waters from one Belgian anaerobic ret or about 6 times that of average domestic sewage.

Production of cellulose from flax stalks and its further processing to artificial fibers. K. G. Plaeschke. PB L 73712; frames 5455-5531, 1937. *Bibl. Sci. Ind. Reports 6*, 1084 (Sept. 19, 1947); Price: Enlargement print $8.00; *in German.*

Retting flax and other textile fibers with bacteria. André-Romain Prevot & Marcel Raynaud. French P. 929 421, Aug. 15, 1947 (through *Bull. de L'Institut Textile* No. 9, 115 (Feb. 1949).

Flax, hemp, or jute is immersed in water at 37-40°C and the bath seeded with a newly discovered anaerobic bacterium, *Clostridium Corallinum.* Rather large quantities are used to produce a rapid action during the first stages, thus reducing the useless or injurious effects of the accompanying flora.

Technical value of the fibers in the fruiting part of the flax stalk. Walther Rüdiger. *Melliand Textilber. 29*, 77-8 (Mar. 1948).

The anatomy of the upper or fruiting part of the flax stem is described and illustrated by means of a schematic cross-section. Examination of cross-

sections and longitudinal sections show that the structure of the tissue, principally because of the lack of secondary increase in thickness, differs decidedly from the technically useful parts of the stalk. The fibers of the fruiting part are worthless because of their chemical composition, their shortness, and their lack of strength. For the most part, they go into tow. However, undamaged fruiting parts or shattered fibers sometimes get into the flax flock where they are troublesome. This is illustrated by means of a photograph. Determinations of the fiber content show that the fruiting part generally contains less fiber than the stalk.

Suitability of jute fiber as a source of cellulose. P. B. Sarkar. *J. Sci. Ind. Research (India) 7B,* 21-4 (Feb. 1948).

A method of obtaining α cellulose from jute fiber is described whereby lignin is removed in approximately 2 hrs. by treating the fibers with sodium chlorite (Textone); a preliminary treatment with a 0.25% caustic soda solution at room temperature for 1 hr. makes possible the delignification of the fibers by the chlorite in 1 hr. instead of 2. The holocellulose thus obtained is next treated with sodium hydroxide at room temperature to dissolve the hemicelluloses. The α-cellulose is obtained in the form of a white pulp. The quality of cellulose obtained from jute is considered and analytical data are presented. It is concluded that the question of cost apart, α-cellulose from jute fiber appears to be suitable for the preparation of cellulose acetate for acetate rayon. Fortisan, moulding powder, etc., or for high tenacity viscose rayon. The quality of the cellulose from jute compares favorably with that of cellulose from cotton linters. Jute stems, however, are not suitable as a raw material for α-cellulose.

New fiber crop. Anon. *Chem. Eng. News 27,* 787 (Mar. 14, 1949).

Kenaf, a fiber crop new to the Western Hemisphere, is now being grown successfully in Cuba and El Salvador as a result of collaborative work between agricultural scientists of the U. S. and Latin American countries, the U. S. Dept. of Agriculture has revealed. It is an effective substitute for jute fiber, a principal source of cordage and bagging material which normally is imported from India. Botanically, kenaf is known as *Hibiscus cannabinus* and is distantly related to cotton and okra. Its seed yields an oil comparable to cottonseed oil. Raw fiber of the kenaf type is also important to U. S. manufacturers of hooked

rugs, carpeting, twines, burlap, bags, electric cables, and oakum.

Extraction of ramie fiber. Wm. F. Prehn. *L'Industrie Textile* No. 740, 212-3 (July, 1948); *in French* (through *Bull. de L'Institut Textile*).

There is no satisfactory process for the extraction of ramie at present, but an Australian method appears to have solved the problem. It consists of separating the fibers from the green stalk by subjecting them to steam pressure. After drying, the stalks are crushed and impurities removed. Cultivation of ramie requires a humid, semi-tropical climate, without dry winds, and a suitable deep soil. Ramie may have a great future in fabrics for clothing.

New method for degumming ramie. Chih. H. Chu, China Textile Corp. Ltd. *Textile Mfr. 75,* 38-9 (Jan. 1949).

A new process for degumming ramie, developed by the author, is briefly described. The process comprises immersing the china grass in a bacterial solution which attack the gums and waxes, but leaves the cellulose fibers unharmed. This process requires 26-32 hrs., careful control of temperature and pH value, and agitation to insure uniform results. A 1% caustic soda solution is then used to treat the fiber in an open kier while the temperature is raised to 100°C and held for 1 hr. to hydrolyze in the remaining pectin. The fiber is then scoured, to bring out its whiteness and luster, at room temperature with 1°Be of dilute sulfuric acid for 10-15 min., during which time it is agitated intermittently. After being removed from the acid solution, the fiber is washed thoroughly. The fibers are treated with an oil emulsion while still damp to soften them as they will dry harsh and wiry and be difficult to separate without this treatment. The oil emulsion is removed from the fibers by centrifuge. Two years experience and experimentation with the process have shown that China grass should produce approximately 65-79% fiber, and yield 33-35 of ramie yarn.

What shall we do about ramie? W. W. Black, Ramie Products Development Corp., S. A. *Textile Colorist 70,* 18-9, 41-2 (Dec. 1948).

The ramie plant contains protein, chlorophyll, xanthophyll, carotene, waxes, pectin, and tannins in addition to cellulose. It is said to be the cheapest and most prolific source of vegetable protein, and has been considered as raw material for pro-

tein fiber. It is suggested that if all the results of all the studies that have been made on ramie could be pooled together and coordinated they would form an excellent basis for future research and development.

LONG VEGETABLE FIBERS. Ludwig Weindling. New York, Columbian Univ. Press; London, Geoffrey Cumberlege at Oxford Univ. Press, 1948. 311 pp. Price: $5.00.

As a general survey of the long vegetable fiber producing and consuming industries this book is adequate and comprehensive. In most respects it is admirable, though in few cases the author fails to mention recent significant advances in machine design or manufacturing technique and gives out-of-date statistics. Special emphasis is placed on the American scene and the sections on jute and hard fibers are of particular interest and importance.—*Fibres, Fabrics & Cordage.*

Treatment of vegetable fibers to facilitate spinning. Jean Passot & Jos. Reydel. French P. 924 782, Mar. 17, 1947 (through *Bull. de L'Institut Textile*).

Hard fibers without bends, such as esparto, coconut fibers, broom, etc. are treated with caustic alkali, rinsed with water until neutral to phenolphthalein, dried, then plunged into a solution of sulfuric, acetic or hydrochloric acid. After washing and drying, the fiber is ready to be spun.

Examination of sample fleeces of the DLG—exhibition 1933 in Berlin. H. Wicht. PB L 74121; frames 7647-7678, 1939. *Bibl. Sci. Ind. Reports 6,* 1078 (Sept. 19, 1947); Price: Enlargement print $3.50; *in German.*

Artificial fibers A 2

Arrangement of spinning nozzles. Deutsche Gold- und Silberscheideanstalt. Registered design 1518 505/29a, Aug. 15, 1941. PB L 70411; frames 609-611. *Bibl. Sci. Ind. Reports 6,* 1124 (Sept. 19, 1947); Price: Enlargement print $1.50; *in German.*

Drawing included.

Bleaching process. E. I. du Pont de Nemours & Co. French P. 927 217, Apr. 28, 1947 (through *Bull. de L'Institut Textile*).

Colorless acrylonitrile filaments are produced, without injury to the physical properties of the product, by passing the filaments through a coagulation bath for a sufficient distance for them to solidify, maintaining them in the gel state, and

soaking in an aqueous solution of H_2O_2 or hypochlorous acid at 50 to 100°C for a short time.

Compositions comprising polymers of acrylonitrile and shaped articles therefrom. E. I. du Pont de Nemours & Co. Indian P. 30 037 (through *J. Sci. Ind. Research (India)*).

Filaments, yarns, films, bands, ribbons, and the like, are obtained from solutions of a polymer of acrylonitrile in one or more volatile organic solvents.

Cutter. I. G. Farbenindustrie A. G. Patent application I 69945 VII/76b. PB 34259, July, 1941. 3 pp. *Bibl. Sci. Ind. Reports 3,* 833 (Dec. 13, 1946); Price: Microfilm $1.00; Photostat $1.00. (Translation of this paper, 34259-T, available from Research Information Service, 509 5th Ave., N. Y. 17, N. Y.; Price: $5.50).

Cutting of endless bundles of synthetic threads may be accomplished by the interaction of a cutting cone and a flexible support. The cone is equipped with cutters, arranged axially or obliquely. Diagrams.

Decolorizing process. E. I. du Pont de Nemours & Co. French P. 927 216, Apr. 28, 1947 (through *Bull. de L'Institut Textile*).

Yarns, filaments and fibers of polymeric acrylonitrile are rendered colorless by immersing them in an aqueous solution of hypochlorous acid containing 0.05 to 1% free chlorine at a temperature of at least 90°C.

Filaments and other artificial articles and their manufacture. E. I. du Pont de Nemours & Co. French P. 924 312, Mar. 3, 1947 (through *Bull. de L'Institut Textile*).

The physical properties of filaments of acrylonitrile polymers, especially tenacity, are improved without decreasing the elongation by heating to at least 100°C and drawing it out 4 to 10 times its original length. The process does not require special equipment.

Films, filaments, fibers and like articles from solutions. Imperial Chemical Industries Ltd. Indian P. 35 304 (through *J. Sci. Ind. Research (India)*).

Insolubilized protein artificial filamentary products. Imperial Chemical Industries Ltd. Indian P. 35 304 (through *J. Sci. Ind. Research (India)*).

Insolubilized protein artificial filamentary products. Imperial Chemical Industries Ltd. In-

dian P. 35 462 (through *J. Sci. Ind. Research (India)*).

Interpolymers of ethylene with vinyl esters and films and filaments made therefrom. E. I. du Pont de Nemours & Co. Indian P. 33 465 (through *J. Sci. Ind. Research (India)*).

This invention provides for completely or partially hydrolyzing a polymer of ethylene with a vinyl ester of an organic acid.

Large spinning nozzle for plastic threads. Deutsche Gold- und Silberscheideanstalt. Registered design 1517 914/29a, Oct. 7, 1940. PB L 70411; frames 453-462. *Bibl. Sci. Ind. Reports 6*, 1122 (Sept. 19, 1947); Price: Enlargement print $1.50; *in German.*

Drawings included.

Method for producing rippled synthetic fiber. I. G. Farbenindustrie A. G. Ger. P. 749 003, Nov. 1944. PB L 70147; frames 33-35. *Bibl. Sci. Ind. Reports 6*, 1099 (Sept. 19, 1947); Price: Enlargement print $1.50; *in German.*

New fibers of a wool-like nature. P. Eckert. PB L 74108; frames 8570-8613, 1940. *Bibl. Sci. Ind. Reports 6* 1078 (Sept. 19, 1947); Price: Enlargement print $4.50; *in German.*

New highly polymeric linear esters and the production of filaments, fibers and the like therefrom. Imperial Chemical Industries Ltd. Indian P. 34 370 (through *J. Sci. Ind. Research (India)*).

Fiber forming polymeric polyesters are produced by heating of mixture of a dicarboxylic acid and a glycol.

Non-metallic bottom plate of a spinning nozzle, for the production of artificial threads, with metallic openings. Deutsche Gold- und Silberscheideanstalt. Registered design 1518 485/29a, Sept. 14, 1940. PB L 70411; frames 599-602. *Bibl. Sci. Ind. Reports 6*, 1124 (Sept. 19, 1947); Price: Enlargement print $1.50; *in German.*

Drawing included.

Perfected process for the continuous production of synthetic substances. E. I. du Pont de Nemours & Co. French P. 927 334, Apr. 28, 1947 (through *Bull. de L'Institut Textile*).

Molten synthetic linear polymers are tempered to produce materials with uniform physical characteristics by passing the filament, after extrusion, and while still near the melting point, through a tempering liquor to which it is chemically inert, and keeping it going in the same direction as at the contact with the liquid.

Polymeric linear terephthalic esters. The Calico Printers' Assn. Ltd. Australian P. 130 652, Oct. 20, 1945.

A process for manufacturing highly polymeric materials capable of being formed into filaments and cold drawn, comprises heating and reacting, preferably in the presence of a metal catalyst and in an inert atmosphere, a polymethylene glycol having from 2 to 10 C atoms and terephthalic acid body which is capable of reacting with the glycol to produce a glycol terephthalate, further heating the glycol terephthalate above its melting point to produce a high polymer, distilling off the polymethylene glycol which is liberated and continuing heating till filaments formed from the mass may be cold drawn.

Procedure for making uniform newly spun artificial thread bundles. Heckert. I. G. Farbenindustrie A. G. Ger. P. 749 175, Nov. 1944. PB L 70147; frames 344-346. *Bibl. Sci. Ind. Reports 6*, 1104 (Sept. 19, 1947); Price: Enlargement print $1.50; *in German.*

Drawing included.

Process for manufacturing artificial fibers, films and sheets. I. G. Farbenindustrie A. G. Patent application I 66134 IVc/29b. PB 31627, Dec. 1939. 6 pp. *Bibl. Sci. Ind. Reports 3*, 221 (Oct. 18, 1946); Price: Microfilm $1.00; Photostat $1.00; *in German.* (Translation of this paper, PB 31627-T, available from Research Information Service, 509 5th Ave., N. Y. 17, N. Y.; Price: $35.00).

This application is an addition to a previous patent. (See also PB 31641 below.) High molecular weigh synthetic paraffins, (400 C and large) produced by various methods of hydrogenation may be used for the manufacture of fibers and threads. Brief mention is made of a method of preparing the high molecular weight paraffin.

Process for manufacturing artificial fibers, films and sheets. I. G. Farbenindustrie A. G. Patent application I 65401 IVc/29b. PB 31641, Aug. 1939. 5 pp. *Bibl. Sci. Ind. Reports 3*, 222 (Oct. 18, 1946); Price: Microfilm $1.00; Photostat $1.00; *in German.* (Translation of this paper, PB 31641-T, available from Research Information Service, 509 5th Ave., N. Y. 17, N. Y.; Price: $35.00).

These synthetic products may be manufactured from paraffins of high molecular weight. The paraffins, which are more than 400 C in chain

length, are obtained by pressure hydrogenation of CO. After the paraffins have been dissolved in suitable solvents, the solution is spun and the solvent removed. The fibers are subjected to extensive stretching when still in a plastic state. According to a different method the molten paraffin is forced through a fine spinneret, and the fibers are stretched at a temperature below their softening point. See also PB L 31627 above.

Process for obtaining artificial fiber from albuminous substances by dry spinning. Rudolf Signer. Ger. P. 749 504, Nov. 1944. PB L 70147; frames 1017-1019. *Bibl. Sci. Ind. Reports 6*, 1113 (Sept. 19, 1947); Price: Enlargement print $1.50; *in German.*

Process for producing artificial threads or fibers from polyvinyl chloride and cellulose esters or ethers. I. G. Farbenindustrie A. G. Patent application I 66615 IVc/29b. PB 31650, Mar. 1940. 6 pp. *Bibl. Sci. Ind. Reports 3*, 223 (Oct. 18, 1946); Price: Microfilm $1.00; Photostat $1.00; *in German.* (Translation of this paper. PB 31650-T, available from Research Information Service, 509 5th Ave., N. Y. 17, N. Y.; Price $14.00).

A polyvinyl chloride solution is used as external spinning liquid and a solution of cellulose esters or ethers as internal spinning liquid; the threads are coagulated in aqueous spinning solutions. Triesters or triethers or lower cellulose esters or ethers are used. Furthermore, mixed esters, mixed ethers, or mixed ether-esters of cellulose are used. The amount of cellulose or ether should come to at least 12-15% of the fiber weight. And endless curled thread is produced by heating. Before being exposed to moist heat the thread is treated with dry heat (100-110°C) for 1-5 hours.

Process for producing stretched threads or yarns from synthetic linear polymers. I. G. Farbenindustrie A. G. Patent application I 68982 VII/29a. PB 34182, Feb. 1941. 7 pp. *Bibl. Sci. Ind. Reports 3*, 825 (Dec. 13, 1946); Price: Microfilm $1.00; Photostat $1.00. (Translation of this paper, PB 34182-T, available from Research Information Service, 509 5th Ave., N. Y. 17, N. Y.; Price: $13.25).

A cold stretching appliance for the treatment of threads or yarns from linear polymers is designed to achieve permanent stretching to 150% of the original length. A rod for the fixation of the stretching point is installed flexibly between the feed roll and take-off roll. It is balanced by an adjustable weight in such a manner that the tension exerted on the thread is kept just below the thread's breaking point. A drawing is included.

Process for producing threads, wires, strips, etc. from organic thermoplastic high polymers. I. G. Farbenindustrie A. G. Patent application I 66016 VII/29a. PB 31607, Nov. 1939. 5 pp. *Bibl. Sci. Ind. Reports 3*, 219 (Oct. 18, 1946); Price: Microfilm $1.00; Photostat $1.00; *in German.* (Translation of this paper, PB 31607-T, available from Research Information Service, 509 5th Ave., N. Y. 17, N. Y.; Price: $12.50).

The polymers such as vinyl polymers are forced through a spinneret with many holes under high pressure and at as low a temperature as possible. The extruded materials are removed as quickly as possible, as they emerge from the spinneret. They are later stretched at low temperature.

Spinning nozzle. Deutsche Gold- und Silberscheideanstalt. Registered design 1518 502/29a, July 24, 1941. PB L 70411; frames 606-608. *Bibl. Sci. Ind. Reports 6*, 1124 (Sept. 19, 1947); Price: Enlargement print $1.50; *in German.*

Drawing included.

Spinning nozzle, with supporting plate. Kurmaerkische Zellwolle aund Zellulose A. G. Registered design 1517 789/29a, Apr. 14, 1942. PB L 70411; frames 414-416. *Bibl. Sci. Ind. Reports 6*, 1122 (Sept. 19, 1947); Price: Enlargement print $1.50; *in German.*

Drawing included.

Stability and filterability of spinning solutions made from rennet casein. W. Winkler. *Kunstseide und Zellwolle 26*, 66-9 (Apr. 1948); *in German* (through *Bull. de L'Institut Textile*).

The casein used to make lanital is coagulated by sulfuric acid under controlled conditions. Casein coagulated by rennet is not suitable for the production of fibers because it is hard to dissolve and its solutions are unstable. This is explained by the fact that the textile casein is almost completely freed of inorganic matter (calcium phosphate) by the acid. Experiments performed by the author show that rennet casein can be demineralized, especially by oxalic acid together with sodium sulfate. This treatment favors the solution of the casein and makes the solution more stable. This solution spins as well as the solutions of textile casein.

Synthetic blood suture and method. John O. Bower. USP 2 457 804, Jan. 4, 1949.

Surgical sutures which are absorbed in animal

tissues are made from blood or from certain components of blood by adding sodium sulfide and animal glue, then extruding into a solution of 17% NaOH. The filaments so formed are set by immersing in a solution containing H_2SO_4, formaldehyde and dextrose while stretching them 25%, and are then stretched another 25%, in a stretching and strengthening solution containing formaldehyde, glycerol, and animal glue, then dried and hardened 2-3 days before subjecting to further strengthening and hardening in formaldehyde solution. The sutures are dried and stored in xylene or cumene. They may be softened with a nonvolatile oil.

Use of synthetic materials in the artificial fiber and textile industry. Klaus Stoeckhert. *Melliand Textilber. 29,* 29-32 (Jan. 1948); *in German.*

This is a review, with 74 references, on the application of plastics to textile manufacture in the English-speaking countries. The development of Terylene, silicones, polymers of acrylonitrile, Vinyon N, Saran, Chemclad, Plexon, Syton, Masslinn, Koloc, Kandar, Resloom, Lanaset, Geon, Fortisan, and Bubblefil are discussed briefly.

Cellulose

Device for continuous production of alkali cellulose. Vereinigte Glanzstoff Werke A. G. Registered design 1518 846/29a, July 1, 1941. PB L 70411; frames 679-683. *Bibl. Sci. Ind. Reports 6,* 1125 (Sept. 19, 1947); Price: Enlargement print $1.50; *in German.*

Drawings included.

Method for producing washable finished textile fabric from cellulose hydrate fibers. Guehle. Chemische Fabrik Theod. Ger. P. 749 049, Nov. 1944. PB L 70147; frames 128-130. *Bibl. Sci. Ind. Reports 6,* 1101 (Sept. 19, 1947); Price: Enlargement print $1.50; *in German.*

Procedure for animalizing cellulose hydrate fibers. Nelles & Bayer. I. G. Farbenindustrie A. G. Ger. P. 749 177, Nov. 1944. PB L 70147; frames 350-351. *Bibl. Sci. Ind. Reports 6,* 1104 (Sept. 19, 1947); Price: Enlargement print $1.50; *in German.*

Process for improving the spinning quality of cellulose hydrate fibers. Torke. Phrix-Arbeitsgemeinschaft. Ger. P. 749 505, Nov. 1944. PB L 70147; frames 1020-1021. *Bibl. Sci. Ind Reports 6,* 1113 (Sept. 19, 1947); Price: Enlargement print $1.50; *in German.*

Process for manufacturing curled threads, fibers or ribbons from cellulose. I. G. Farbenindustrie A. G. Patent application I 66132 IVc/29b. PB 31625, Dec. 1939. 23 pp. *Bibl. Sci. Ind. Reports 3,* 220 (Oct. 18, 1946); Price: Microfilm $1.00; Photostat $1.00; *in German.* (Translation of this paper, PB 31625-T, available from Research Information Service, 509 5th Ave., N. Y. 17, N. Y.; Price: $6.00).

A fiber consisting of an inner core and an outer mantle is spun; the tension applied during the spinning of the 2 layers differs and upon subsequent swelling, the forces are released to curl the thread. These 2 layers differing in tension may be formed by regeneration of the cellulose hydrate in 2 separate baths. The acidity of the first bath allows the regeneration of the outer layer of the thread only. Upon stretching, the filament is inserted into a second bath, where complete cellulose hydrate formation takes place. The swelling is accomplished in a medium of hot air, steam or other swelling agents.

Process for producing cellulose solutions. (Source missing). Ger. P. 749 082, Nov. 1944. PB L 70147; frames 178-179. *Bibl. Sci. Ind. Reports 6,* 1101 (Sept. 19, 1947); Price: Enlargement print $1.50; *in German.*

Glass

Fibers of colored glass. Owens-Corning Fiberglas Corp. French P. 926 763, Apr. 21, 1947 (through *Bull. de L'Institut Textile*).

Vanadium oxide is added to a glass composition containing no alkali or very little alkali to produce relatively intense coloration, ranging from clear henna to black.

Method and device for producing rippled fiber from melted glass and other materials plastic in heat. Dockerty. Algemeine Kunstvezel Moatschappij N. V. Ger. P. 749 010, Nov. 1944. PB L 70147; frames 43-46. *Bibl. Sci. Ind. Reports 6,* 1099 (Sept. 19, 1947); Price: Enlargement print $1.50; *in German.*

Method for improving the tensile strength and pliability of glass fiber. Ebaugh. Gerresheimer Glashüttenwerke A. G. Ger. P. 749 011, Nov. 1944. PB L 70147; frames 47-48. *Bibl. Sci. Ind. Reports 6,* 1099 (Sept. 19, 1947); Price: Enlargement print $1.50; *in German.*

Methods of machining glass mat filled textolite. Catherine T. Amond & Edmund F. Wicks. PB L 79136, June, 1947. 18 pp. *Bibl. Sci. Ind.*

Reports 6, 1046 (Sept. 19, 1947). Price: Microfilm $1.00; Photostat $1.00.

In this report the machining methods, e.g., tapping, drilling, milling, turning and boring of glass mat filled textolite material are described and illustrated by 12 photographs. Sketches of milling and boring tools are also included.

Procedure for improving glass fibers. Gerth. Chemische Werke Albert. Ger. P. 749 179, Nov. 1944. PB L 70147; frames 355-356. *Bibl. Sci. Ind. Reports 6*, 1104 (Sept. 19, 1947); Price: Enlargement print $1.50; *in German.*

Process for the production of textile fibers permeable to ultraviolet rays; use of these fibers for the production of flexible or rigid screens and industrial products of this process. Levitte Mariac. French P. 930 621, Aug. 18, 1947 (through *Bull. de L'Institut Textile*).

Fibers which permit the passage of ultraviolet rays can be produced by (a) spinning fibers from black glass (Wood's glass), or in drawing out certain kinds of glass (Thuringia glass, lime glass, manganese oxide glass, etc.); (b) fibers made of cellulose or of Canada balsam; (c) textile fibers from synthetic resins (methacrylic resins, polyamides, etc.); (d) using natural or synthetic fibers subjected to suitable treatment.

Polyamides

Modification of the properties of polyamide. Imperial Chemical Industries Ltd. Indian P. 31 712 (through *J. Sci. Ind. Research (India)*).

Polyamides as textile raw materials in the light of the patent literature. Karl Fabel. *Melliand Textilber. 29*, 137-42 (Apr. 1948); 173-4 (May, 1948); 209-11 (June, 1948); 240-3 (July, 1948); *in German.*

Patents of Germany, U. S., Belgium, Canada, Denmark, Great Britain, France, Netherlands, Italy, Norway, Sweden, Switzerland and Hungary are reviewed. They are classified into (A) methods of forming filaments, bristles, and tape from polyamides, and (B) the application of these forms to various purposes, and further subdivided into (1) formation (2) mechanical treatment and (3) chemical treatment of the filaments, bristles, and tapes. Coatings and impregnating materials made from polyamides, and the dyeing of polyamides are also discussed.

Process for improving the lightfastness of linear fiber-forming polyamides. I. G. Farbenindustrie A. G. Patent application I 68800 IVc/29b.

PB 34157, Feb. 1941. 8 pp. *Bibl. Sci. Ind. Reports 3*, 823 (Dec. 13, 1946); Price: Microfilm $1.00; Photostat $1.00. (Translation of this paper, PB 34157-T, available from Research Information Service, 509 5th Ave., N. Y. 17, N. Y.; Price: $14.00).

The lightfastness of linear polyamides, particularly those from ε-aminocaproic acid, is considerably improved by the addition of small amounts of manganese compounds to the raw materials or to the finished polyamides.

Process for manufacturing mixed shapes, sheets, threads and films from polyamides and cellulose or cellulose derivatives. Deutsche Celluloid-Fabrik A. G. Patent application D 80979 IVa/39b. PB 31572, Aug. 1939. 4 pp. *Bibl. Sci. Ind. Reports 3*, 217 (Oct. 18, 1946); Price: Microfilm $1.00; Photostat $1.00; *in German.* (Translation of this paper, PB 31572-T, available from Research Information Service, 509 5th Ave., N. Y. 17, N. Y.; Price: $9.50).

Solutions in organic solvents of high polymers, obtained by condensation of α-ω-diamines, ω-amino carboxylic acids and others, is difficult. Simultaneous precipitation of these polyamides from an acid solution with an alkaline solution of cellulose, results in the formation of a mixed material of improved properties.

Process for preparing high-polymeric linear polyamides. I. G. Farbenindustrie A. G. Patent application I 65521 IVd/12o. PM 31559, Aug. 1939. 9 pp. *Bibl. Sci. Ind. Reports 3*, 216 (Oct. 18, 1946); Price: Microfilm $1.00; Photostat $1.00; *in German.* (Translation of this paper, PB 31559-T, available from Research Information Service, 509 5th Ave., N. Y. 17, N. Y.; Price: $12.50).

The reaction mixture contains (among the other substances which form polyamides on heating), an aromatic p-dicarboxylic acid, or a derivative of such an acid, which forms amides when heated with amines, and corresponding amounts of a bi-functional amine. Furthermore, the reaction mixture contains aminocarboxylic acids, which form polyamides on heating, or their polyamide-forming derivatives. Cyclic anhydrides of amino acids with at least 5 C atoms between N and COOH are condensed with a salt of a p-dicarbocyclic acid and ωω'-diamine.

Rayon

Advancing reel. Wm. G. Esmond (to Celanese Corp. of Am.). USP 2 459 270, Jan. 18, 1949.

A thread advancing reel comprises a rotatable shaft and a number of longitudinally extending bars mounted on the shaft for rotation therewith. Each of the bars is reciprocated individually by means of a solenoid exerting magnetic attraction against the tension of a spring. Commutator strips are provided to energize the solenoids in the required order. The device is intended for use in the manufacture of rayon. The yarn may be subjected to a treatment with a fluid medium during the movement of the yarn along the reel.

Apparatus for cutting staple fibers. I. G. Farbenindustrie A. G. Patent application I 69659 VII/29a. PB 34245, May, 1941. 9 pp. *Bibl. Sci. Ind. Reports 3*, 832 (Dec. 13, 1945); Price: Microfilm $1.00; Photostat $1.00. (Translation of this paper, 34245-T, available from Research Information Service, 509 5th Ave., N. Y. 17, N. Y.; Price: $17.00).

This apparatus is intended to correct certain disadvantages inherent in an appliance for cutting short-fibered rayon which is described in USP 1 723 998. The apparatus is provided with scrapers which pick up and remove excessively long fibers that escaped the cutting knife. Diagrams.

Apparatus for the fluid treatment of thread or the like. Kenneth M. McLellan (to Industrial Rayon Corp.). USP 2 460 261, Jan. 25, 1949.

In a continuous process for manufacture of rayon yarns and similar materials, disclosed in USP 2 284 497 and USP 2 210 914, a thread will occasionally break during its progression from one advancing reel to the next. The rapidly revolving reel will tend to throw the broken thread and solution about the reels in an erratic manner, frequently forcing the yarn or thread to become entangled with yarns on other such reels. The present invention provides a means for limiting the broken end to its processing locality. This is done by means of a separating plate acting as a partition between each series of processing reels. The plate is also designed to return any liquid thrown against it to a trough for future use.
LCL

Device for dehydrating and aftertreating rayon thread balls which are arranged one on top of the other. Kurmaerkische Zellwolle und Zellulose A. G. Registered design 1516 499/29a, Mar. 9, 1942. PB L 70411; frames 163-165. *Bibl. Sci. Ind. Reports 6*, 1119 (Sept. 19, 1947); Price: Enlargement print $1.50; *in German.*

Drawing included.

Device for unwinding rayon pre-spinning materials. Raymond Dewas. Ger. patent application D 89 451, Dec. 11, 1942. PB L 74390; frames 3865-3874. *Bibl. Sci. Ind. Reports 6*, 1033 (Sept. 12, 1947); Price: Enlargement print $1.50; *in German.*

Drawings included.

For and against rayon staple fibers. G. Salzmann. *Melliand Textilber. 29*, 149-50 (May, 1948); *in German.*

The properties and uses of fabrics made from rayon staple are discussed. The wet strength of the filament may be increased by stretching during coagulation or by using a strongly acid precipitation bath (Lilienfeld process) but these treatments cause a decrease in the elastic extension. The strength of viscose fiber may also be increased by preventing the depolymerization of the cellulose molecule in processing.

Procedure for winding newly spun wet rayon threads. Bochmann. Barmer Maschinenfabrik A. G. Ger. P. 749 176, Nov. 1944. PB L 70147; frames 347-349. *Bibl. Sci. Ind. Reports 6*, 1104 (Sept. 19, 1947); Price: Enlargement print $1.50; *in German.*

Drawing included.

Some promising cellulose-bearing materials (other than cotton) for the manufacture of rayon. M. G. Karnik & D. L. Sen. Indian Central Cotton Committee, Technological Lab. *J. Sci. Ind. Research (India) 7*, 351-6 (Aug. 1948).

A comprehensive survey was made of cellulose-bearing materials by the Technological Laboratory of the Indian Central Cotton Committee. It was shown that certain species of bamboo, reeds, bagasse, jute fibers, etc., are capable of yielding pulps of suitable quality by modifications of normal processes. This paper reports investigations made to determine the possibility of using these materials in industries which may be of great importance in India in the future. Factors considered were: (1) availability, (2) yield of pulp, (3) cost, and (4) quality of pulp obtained. Methods used in processing these materials experimentally are noted briefly, and data obtained for the different materials are given.

Spinning nozzle and nozzle screw joint for the production of synthetic threads such as rayon, staple fiber. Deutsche Gold- und Silberscheideanstalt. Registered design 1516 395/29a, Jan. 15, 1941. PB L 70411; frames 134-138. *Bibl. Sci. Ind. Reports 6*, 1118 (Sept. 19, 1947);

Price: Enlargement print $1.50; *in German.* Drawing included.

Spinning with a double bottom spinneret. I. G. Farbenindustrie A. G. Patent application I 65271 VII/27a. PB 31532, July, 1939. 6 pp. *Bibl. Sci. Ind. Reports 3,* 212 (Oct. 19, 1946); Price: Microfilm $1.00; Photostat $1.00; *in German.* (Translation of the paper, PB 31532-T, available from Research Information Service, 509 5th Ave., N. Y. 17, N. Y.; Price: $17.50).

A spinning device is described which allows the manufacture of a rayon thread, consisting of a (concentrically arranged) inner and outer layer. The distance between the 2 bottom plates, which embody the holes for the inner and outer layers, is varied in accordance with viscosity, conditions of the spinning bath and thickness of the thread.

Staple fibers. Kohorn. Indian P. 35 965 (through *J. Sci. Ind. Research (India)*).

Twist produced from rayon and rayon staple threads. Heckenberg A. G. Registered design 1517 156/76c, Feb. 25, 1942. PB L 70411; frames 309-310. *Bibl. Sci. Ind. Reports 6,* 1120 (Sept. 19, 1947); Price: Enlargement print $1.50; *in German.*

Very fine nozzle opening arranged in the bottom of spinning nozzles for the production of rayon and staple fiber. Deutsche Gold- und Silberscheideanstalt. Registered design 1516 460/29a, Mar. 13, 1941. PB L 70411; frames 158-160. *Bibl. Sci. Ind. Reports 6,* 1119 (Sept. 19, 1947); Price: Enlargement print $1.50; *in German.*

Drawing included.

Viscose

Apparatus for continuous manufacture of regenerated cellulose products by the viscose method. Kohorn & Kohorn. Indian P. 36 170 (through *J. Sci. Ind. Research (India)*).

Contributions to the knowledge of synthetic resins as addition agents to viscose spinning solutions. H. Rossow. PB L 74136; frames 2033-2051, 1939. *Bibl. Sci. Ind. Reports 6,* 1071 (Sept. 19, 1947); Price: Enlargement print $2.00; *in German.*

Device to separate and collect gases (carbon sulfide, hydrogen sulfide) which develop during the production of viscose products, for a subsequent recovery. Waclaw Ufnowski. Registered design 1516 180/29a, Sept. 7, 1940. PB L 70411; frames 94-101. *Bibl. Sci. Ind. Reports 6,* 1118 (Sept. 19, 1947); Price: Enlargement print $1.50; *in German.*

Effect of high stretch, applied at the optimum time, on the properties of viscose rayon fibers. Kurt Ramsthaler. *Melliand Textilber. 29,* 39-42 (Feb. 1948); *in German.*

Experiments are described which show that it is possible to produce a staple fiber of high extensibility without loss of strength by applying a high stretch force to the filament as it emerges from the spinning bath by means of a drawing frame with 3 pairs of rollers such as are used in the manufacture of staple fiber. The knotting and looping strength and the elasticity of the filament is also improved.

Process and apparatus for threading up continuous spinning machines. Anne van der Mei (to Am. Enka Corp.). USP 2 459 254, Jan. 18, 1949.

In the continuous spinning apparatus for the production of viscose yarn, yarn guides are provided which comprise a yarn guiding position within a bath and an idle position above the bath, and driven yarn storage means also located above the bath. Upon yarn breakage, the running yarn end may be led from the feeding means to the storage means around an idle element, and the latter may be moved into guiding position while the former guiding element is moved to an idle position. This arrangement makes possible efficient manipulation of the broken yarn without interfering with other yarns running parallel in the same after-treating bath.

Process for manufacturing artificial fibers or threads from viscose. I. G. Farbenindustrie A. G. Patent application I 62846 IVc/29b. PB 31573, Nov. 1938. 7 pp. *Bibl. Sci. Ind. Reports 3,* 217 (Oct. 18, 1946); Price: Microfilm $1.00; Photostat $1.00; *in German.* (Translation of this paper, PB 31573-T, available from Research Information Service, 509 5th Ave., N. Y. 17, N. Y.; Price $12.50).

Threads of improved strength are obtained by subjecting them to swelling (immediately after precipitation) in an alkaline bath, containing salts of zinc or aluminum, and subsequent stretching in hot air or steam.

Process for manufacturing viscose fibers and threads of high strength. I. G. Farbenindustrie A. G. Patent application I 65241 IVa/29b. PB 31529, July, 1939. 6 pp. *Bibl. Sci. Ind. Reports 3*, 212 (Oct. 18, 1946); Price: Microfilm $1.00; Photostat $1.00; *in German.* (Translation of this paper, PB 31529-T, available from Research Information Service, 509 5th Ave., N. Y. 17, N. Y.; Price: $9.00).

High strength rayon is produced by spinning in a bath containing sodium sulfate and 10-14% sulfuric acid, with subsequent swelling, in a separate alkali bath and stretching in the second bath or in steam.

Process for manufacturing viscose fibers and threads of increased dry and wet strength. I. G. Farbenindustrie A. G. Patent application I 65240 IVc/29b. PB 31528, July, 1939. 3 pp. *Bibl. Sci. Ind. Reports 3*, 212 (Oct. 18, 1946); Price: Microfilm $1.00; Photostat $1.00; *in German.* (Translation of this paper, PB 31528-T, available from Research Information Service, 509 5th Ave., N. Y. 17, N. Y.; Price: $10.50).

When rayon is spun in a bath containing zinc sulfate, a fiber of high strength results; the drawback of this method lies in the frequent clogging of the spinning nozzles. This may be remedied by replacing part of the zinc sulfate with ammonium sulfate.

Process for preparing cellulose fiber from viscose. Stöckly. Vereinigte Glanzstoff Fabriken A. G. Ger. P. 749 265, Nov. 1944. PB L 70147; frames 496-497. *Bibl. Sci. Ind. Reports 6*, 1106 (Sept. 19, 1947); Price: Enlargement print $1.50; *in German.*

Procedure for producing artificial products such as rayon with cellulose fiber from viscose of improved textile property. Richard Bartunek. Ger. P. 749 266, Nov. 1944. *Bibl. Sci. Ind. Reports 6*, 1106 (Sept. 19, 1947); Price: Enlargement print $1.50; *in German.*

Process for producing synthetic fibers or thread from viscose. Fink & Plepp. I. G. Farbenindustrie A. G. Ger. P. 749 264, Nov. 1944. PB L 70147; frames 494-495. *Bibl. Sci. Ind. Reports 6*, 1106 (Sept. 19, 1947); Price: Enlargement print $1.50; *in German.*

Process for recovering sulfur from hydrogen sulfide-containing waste gases which form in the production of artificial material by the viscose process. Furkert. Sachsische Zellwolle A. G. Ger. P. 749 178, Nov. 1944. PB L 70147; frames 352-354. *Bibl. Sci. Ind. Reports 6*, 1104 (Sept. 19, 1947); Price: Enlargement print $1.50; *in German.*

YARN PRODUCTION B

Devices for dealing with broken threads in textile machinery. Sulzer Freres S. A. Indian P. 36 779 (through *J. Sci. Ind. Research (India)*).

Fiber preparation B 1

Method for cleaning cellulose. Schütz. Feldmühle, Papier und Zellstoffwerke A. G. Ger. P. 749 029, Nov. 1944. PB L 70147; frames 80-81. *Bibl. Sci. Ind. Reports 6*, 1100 (Sept. 19, 1947); Price: Enlargement print $1.50; *in German.*

Machine for curling fibers of animal, vegetable or mineral origin. Soc. des Cuirs Averseng. French P. 924 752, Mar. 17, 1947 (through *Bull. de L'Institut Textile*).

The fiber is fed into a rotating tube in which it is tamped continuously by a piston. The outlet tube has elastic walls which serve to regulate the pressure on the fiber in the rotating tube. The device is especially adapted to treating hair.

Machine for weaving fibers of animal, vegetable or mineral origin. Soc. des Crins Averseng. French P. 924 751, Mar. 17, 1947 (through *Bull de L'Institut Textile*).

The machine consists of 2 rollers turning in opposite directions in contact with each other. The fibers are passed through these to braking devices in which the fibers move at a lower speed. This imparts a wave which remains permanent.

Carding and combing B 2

Carding of silk. Walther Wegener. *Melliand Textilber. 29*, 46-50 (Feb. 1948); *in German.*

The operation of the roller cards made by 2 European manufacturers is compared and improvements are suggested. Diagrams of the 2 carding machines and operating data are given.

Combing machines for combing textile fibers. Platt Bros. & Co. Ltd. Indian P. 35 198 (through *J. Sci. Ind. Research (India)*).

A graduated setting arm is provided that is located at approximately mid position in the length of the combing machine and in operative connection with the nipper shaft.

Conference on carding. *Textile Mfr. 75*, 25-9, 34 (Jan. 1949).

Summaries are given of a number of the papers presented at the one-day conference on carding, sponsored by the Textile Institute, held at Leeds University on Dec. 16, 1948. The papers summarized are as follows: "Rayon Staple Sliver Formation," by W. Hardacre; "Recent Research on Wool Carding," by R. P. Townsend; "Fiber Arrangement in Card Slivers," by W. E. Morton and R. J. Summers; "The Woolen Carding Condenser," by G. H. Thorndike; and the "Carding of Jute and Flax," by H. J. Dorman and A. V. Pringle.

Device for loosening up continuous slivers. Kurmaerkische Zellwolle and Zellulose A. G. Registered design 1517 634/29a, Dec. 14, 1940. PB L 70411; frames 388-390. *Bibl. Sci. Ind. Reports 6,* 1121 (Sept. 19, 1947); Price: Enlargement print $1.50; *in German.*

Drawing included.

Economical and unobjectionable needling of the combs of a rectilinear comber. Walther Wegener. *Melliand Textilber. 29,* 79-83 (Mar. 1948); *in German.*

A mechanical sorting machine for arranging the needles, developed from an invention made by the author, is described and illustrated. It is recommended that this be used in place of hand setting. The author's needle press is also described and illustrated. There are also some recommendations concerning the circular comber segments.

Fluff and dust removal systems for cotton and like carding engines. Atmospheric Control Ltd. Indian P. 35 620 (through *J. Sci. Ind. Research (India)*).

Improvement in the control of the feeding gill in rectilinear combs (French combs). Soc. Alsacienne de Constructions Mecaniques. French P. 932 003. Nov. 17, 1947 (through *Bull. de L'Institut Textile*).

The penetrating movement of the gill is retarded and stopped before it hits the grid bars to avoid the shock generally produced. A driving cam acts on the lever carrying the gill by means of a lever and a connecting rod.

Method and machine for combing cotton and other textile fibers. Frederick Raubitschek. USP 2 458 732, Jan. 11, 1949.

This invention provides a method of and machine for combing cotton and other textile fibers, in which tuft-holding means are moved continuously around stationary combing means. The tuft-holding means comprises pairs of rollers, at spaced intervals, which hold the tufts as they are combed.

In the progress of these rollers around the combing means, both ends of the tufts are presented to the combing means. This is accomplished by reversing the direction of rotation of the tuft holding rollers. A number of advantages are listed.

Screw with a fine discontinuous thread for controlling the contact bars for all gill boxes. Prayez Sabbe & Leopold Robyn. French P. 929 145, June 30, 1947 (through *Bull. de L'Institut Textile*).

This invention facilitates the vertical release of the bars of the gill box without removing the parts. The threads are interrupted in the central part of the screw.

Drafting and roving B 3

Casing for drawing frames operating with leather tapes. Sächsische Textilmaschinenfabrik Vorm. Richard Hartmann A. G. Ger. P. application S 151 116, July 6, 1942. PB L 74390; frames 3951-3955. *Bibl. Sci. Ind. Reports 6,* 1033 (Sept. 12, 1947); Price: Enlargement print $1.50; *in German.*

Drawings included.

Device for providing twist in rovings preparatory to spinning. Kruse. Indian P. 27 023 (through *J. Sci. Ind. Research (India)*).

Drawing frame particularly for fully synthetic fibers. Ger. patent application P 85 111 VII/76c, Nov. 6, 1942. PB L 74390; frames 3914-3919. *Bibl. Sci. Ind. Reports 6,* 1033 (Sept. 13, 1947); Price: Enlargement print $1.50; *in German.*

Drawings included.

Drawing frame with top rollers that are attached to a flying weight lever and rollers independently set in supports. Sächsische Textilmaschinenfabirk Vorm. Richard Hartmann A. G. Ger. patent application S 153 067, Nov. 25, 1942. PB L 74390; 4119-4122. *Bibl. Sci. Ind. Reports 6,* 1034 (Sept. 12, 1947); Price: Enlargement print $1.50; *in German.*

Drawings included. Addition to patent 724 923.

Drawing frames with automatic control device for the purpose of keeping strands or rovings uniform. Ger. patent application L 112 217, n.d. PB L 74390; frames 4079-4092. *Bibl. Sci. Ind. Reports 6,* 1034 (Sept. 12, 1947); Price: Enlargement print $1.50; *in German.*

Drawings included.

Drawing mechanism for textile fibers. Societe Alsacienne de Constructions Mecaniques. Indian P. 35 728 (through *J. Sci. Ind. Research (India)*).

Improvement in the conical hoppers or trumpets used to condense the strips coming from drawing frames or similar textile machines. John Schofield, Jr. French P. 925 488, Mar. 31, 1947 (through *Bull. de L'Institut Textile*).

The upper and lower parts of this trumpet are separated by a ring which divides it into 2 semiconical parts or into different segments with the upper and lower parts connected by a frustrum of a cone. A pressure ring interposed between the 2 parts improves the condensation of the strip and increases the efficiency of the device. The lower part acts as a device for the removal of "buttons" or thick adhesions by engaging the stop-motion mechanism.

Means for applying pressure to drafting rollers of textile machines. Schofield. Indian P. 39 411 (through *J. Sci. Ind. Research (India)*).

Suction device for roving strips coming from the front roller. Mech. Baumwoll-Spinnerei & Webberei. Ger. patent application M 150 844, May 5, 1941. PB L 74390; frames 3984-3992. *Bibl. Sci. Ind. Reports 6,* 1033 (Sept. 12, 1947); Price: Enlargement print $1.50; *in German.*

Drawings included.

Weight arrangement for drawing frames with double leather tapes. Ger. patent application K 161 598, June 12, 1941. PB L 74390; frames 4016-4021. *Bibl. Sci. Ind. Reports 6,* 1034 (Sept. 12, 1947); Price: Enlargement print $1.50; *in German.*

Drawings included.

Weight saddles for textile machinery rollers. Dobson & Barlow Ltd., & Walsh. Indian P. 39 265 (through *J. Sci. Ind. Research (India)*).

Weighting motions for the drafting rollers used in preparatory and spinning machines. Casablancas High Draft Co. Ltd. Indian P. 36 364 (through *J. Sci. Ind. Research (India)*).

Weighting systems for textile machinery having drafting rollers. Dobson & Barlow Ltd. & Walsh. Indian P. 39263-4 (through *J. Sci. Ind. Research (India)*).

Spinning B 4

Arrangement for a better installation and construction of top rollers attached to a guide arm.

Vereinigte Kugellagerfabriken A. G. Ger. patent application V 37 729, May 20, 1941. PB L 74390; frames 4067-4078. *Bibl. Sci. Ind. Reports 6,* 1034 (Sept. 12, 1947); Price: Enlargement print $1.50; *in German.*

Belt driving drum for spinning machines, doubling frames and similar textile machinery. Carl Hamel. Ger. patent application H 160 822, Oct. 23, 1939. PB L 74390; frames 4041-4045. *Bibl. Sci. Ind. Reports 6,* 1034 (Sept. 12, 1947); Price: Enlargement print $1.50; *in German.*

Bobbin for yarn or similar article. J. & P. Coats Ltd. French P. 924 375, Mar. 10, 1947 (through *Bull. de L'Institut Textile*).

The bobbin consists of a cylinder with a small collar, to one end of which is adjusted a piece made of wood provided with a central perforation and a chamfered band, likewise provided with a central perforation, while the other end is capped with a wooden head. This new bobbin prevents vibration and makes possible more complete emptying.

Bottom of textile spindles. Süddeutsche Spindelwerke Zinser Ebersbach Fils. Ger. patent application S 152 535, Oct. 21, 1942. PB L 74390; frames 3947-3950. *Bibl. Sci. Ind. Reports 6,* 1033 (Sept. 12, 1947); Price: Enlargement print $1.50; *in German.*

Clutch for placing bobbins on spindles. Ger. patent application L 114 359 VII/76c, Apr. 25, 1944. PB L 74390; frames 4008-4011. *Bibl. Sci. Ind. Reports 6,* 1033 (Sept. 12, 1947); Price: Enlargement print $1.50; *in German.*

Drawings included.

Device for eliminating dust and fly by means of compressed air. Mech. Baumwoll-Spinnerei und Weberei. Ger. patent application M 150 843, May 5, 1941. PB L 74390; frames 3993-3999. *Bibl. Sci. Ind. Reports 6,* 1033 (Sept. 12, 1947); Price: Enlargement print $1.50; *in German.*

Drawings included.

Dismounting device for cops from spindles of ring spinning and ring doubling frames as well as for mounting empty tubes on the same spindles. Wilhelm Fischer. Ger. patent application F 89 577, Feb. 28, 1941. PB L 74390; frames 4046-4059. *Bibl. Sci. Ind. Reports 6,* 1034 (Sept. 12, 1947); Price: Enlargement print $1.50; *in German.*

Drawings included.

Drawing frame with leather tapes for spinning machines. Süddeutsche Spindelwerke Zinser. Ger. patent application S 148 284, Dec. 27, 1941. PB L 74390; frames 4093-4098. *Bibl. Sci. Ind. Reports 6,* 1034 (Sept. 12, 1947); Price: Enlargement print $1.50; *in German.*

Drawings included.

Drive for twisting spindle in twisting machines with several rows of bobbins. Barmer Maschinenfabrik A. G. Registered design 1518 494/76c, Apr. 3, 1941. PB L 70411; frames 603-605. *Bibl. Sci. Ind. Reports 6,* 1124 (Sept. 19, 1947); Price: Enlargement print $1.50; *in German.*

Drawing included.

Electric conductivity of spinning materials and its effect on the electrostatic charges. B. Axhausen. PB L 73874; frames 4408-4427, 1933. *Bibl. Sci. Ind. Reports 6,* 1083 (Sept. 19, 1947); Price: Enlargement print $1.50; *in German.*

Flyer with presser. C. Mann. Maschinenfabrik. Ger. patent application M 155 105, Aug. 21, 1942. PB L 74390; frames 4000-4003. *Bibl. Sci. Ind. Reports 6,* 1033 (Sept. 12, 1947); Price: Enlargement print $1.50; *in German.*

Drawings included.

Formula for calculating combed yarn twist. Max Matthes, Textile Research Inst., Kresice (C.S.R.). *Melliand Textilber. 29,* 113-16 (Apr. 1948); *in German.*

The effects of the raw material and the desired yarn properties on the required twist number are discussed, and the more important formulas for calculating the spinning twist are tabulated in chronological order. An improved formula for worsteds $n = qaN^x$, is derived, in which n = number of twists per meter, q is a coefficient characteristic of the material being spun, N is the metrical yarn count, x is a coefficient characteristic of the material being spun, and a is the twist. Values for a, q, and x were determined for the more important qualities of wool used in spinning combed yarn and from these, a tentative table for the twist of combed yarn was compiled.

Handbrake for ring and doubling spindles. Ger. patent application L 114 360 VII/76c, Apr. 15, 1944. PB L 74390; frames 4012-4015. *Bibl. Sci. Ind. Reports 6,* 1033 (Sept. 12, 1947); Price: Enlargement print $1.50; *in German.*

Drawings included.

Flyers for spinning and like machines. Jonathan Hattersley & Son Ltd. Indian P. 35 347 (through *J. Sci. Ind. Research (India)*).

Flyers for spinning machines comprise a central driving socket, a transverse top member, and 2 tubular legs, the legs and tranverse top member being made in one piece from a single blank by cold pressing.

High drafting mechanism of ring spinning and other textile machines. Schofield. Indian P. 34 427 (through *J. Sci. Ind. Research (India)*).

Hollow spindle for making fancy yarns. Bourgeas Erther. French P. 928 761, June 9, 1947 (through *Bull. de L'Institut Textile*).

A hollow spindle is mounted vertically. The core thread passes through the hollow part and the effect yarn is unwound from a bobbin placed on the spindle.

Hydraulically operated mechanism for the periodic rising and descending of the flyer frame or ring spinning and ring doubling frames. Carl Hamel. Ger. patent application H 167 434, Jan. 17, 1942. PB L 74390; frames 3962-3968. *Bibl. Sci. Ind. Reports 6,* 1033 (Sept. 12, 1947); Price: Enlargement print $1.50; *in German.*

Drawings included.

Method and mechanism for regulating the tension of the yarn on ring spinning frames and ring doubling machines. Alexander Schön. Ger. patent application Sch 128 194, Oct. 16, 1943. PB L 74390; frames 3909-3913. *Bibl. Sci. Ind. Reports 6,* 1033 (Sept. 12, 1947); Price: Enlargement print $1.50; *in German.*

Drawings included.

Mill manual for spinning superintendents. Oscar John. *Melliand Textilber. 29,* 117-19 (Apr. 1948); *in German.*

The contents of the proposed manual are given, together with some sketches of the arrangements of mill machinery and tables for drafting and spinning calculations and for the inspection of machinery.

Need for increasing the production of two-cylinder spinning frames and directions for doing so. Fritz Pflugfelder. *Melliand Textilber. 29,* 191-4 (June, 1948); *in German.*

The outputs of 195 self-acting mules were compared and the various factors which affect production were analyzed. It was concluded, amongst other things, that the efficiency of the card can be increased by decreasing the lost time required for

cleaning, regardless of how efficient it is during operation. Because of the low efficiency of the self-actor, reduction of the loss of time in removing cops is essential to an increase in production.

Process and appliance for spinning acetate fibers in cotton spinning machines. I. G. Farbenindustrie A. G. Patent application I 66759 VII/76b. PB 31659, Mar. 1940. 5 pp. *Bibl. Sci. Ind. Reports 3*, 224 (Oct. 18, 1946); Price: Microfilm $1.00; Photostat $1.00; *in German.* (Translation of this paper, PB 31659-T, available from Research Information Service, 509 5th Ave., N. Y. 17, N. Y.; Price: $15.00).

Best suited for this process are acetate fibers of 2.5-3 denier. Prior to the spinning, the acetate fibers are moistened with 6-10% of water and left to remain thus for several hours. The further process takes place under special precautions and at a temperature of 25-26°C and an atmospheric humidity of 70%. The apparatus and entire complex procedure are described in detail.

Ring spinning frame (Source missing). Ger. patent application S 153 530, Jan. 4, 1943. PB L 74390; frames 4060-4066. *Bibl. Sci. Ind. Reports 6*, 1034 (Sept. 12, 1947); Price: Enlargement print $1.50; *in German.*

Drawing included.

Roving guide for drawing frames of ring spinning machines. Wilhelm Göhler. Ger. patent application, June 15, 1942. PB L 74390; frames 4022-4029. *Bibl. Ind. Sci. Reports 6*, 1034 (Sept. 12, 1947); Price: Enlargement print $1.50; *in German.*

Drawings included.

Spindle for multiple twist. Philippe Gleize & Felix Plant. French P. 929 730, July 22, 1947 (through *Bull. de L'Institut Textile*).

This invention concerns a multiple torsion spindle with a hollow shaft traversed by the yarn, in which the bobbin is maintained stationary by means of a planetary train containing a planetary housing integral with the spindle.

Spinning frame. Firma C. F. Solbrig Söhne A. G. Ger. patent application S 145 481, May 5, 1941. PB L 74390; frames 4099-4118. *Bibl. Sci. Ind. Reports 6*, 1034 (Sept. 12, 1947); Price: Enlargement print $2.00; *in German.*

Drawings included.

Spinning of yarns from slivers of jute, flax, hemp, cut artificial silk and other fibers. Jas. Mackie & Sons Ltd. Indian P. 35 063 (through *J. Sci. Ind. Research (India)*).

Sliver is drawn from rolls mounted for rotation in a creel wherein rotation of the rolls is stopped on breakage of the yarn.

Spinning machines, doubling frames or similar machinery with rising and descending flyer frame. Sächsische Textilmaschinenfabrik Vorm. Ger. patent application S 149 197, Mar. 2, 1942. PB L 74390; frames 3956-3961. *Bibl. Sci. Ind. Reports 6*, 1033 (Sept. 12, 1947); Price: Enlargement print $1.50; *in German.*

Spinning regulator. Siemens-Schuckert A. G. Ger. patent application S 146 056, July 5, 1941. PB L 74390; frames 3937-3946. *Bibl. Sci. Ind. Reports 6*, 1033 (Sept. 12, 1947); Price: Enlargement print $1.50; *in German.*

Drawings included.

Spinning ring and doubling ring with clamp attachment. Ernst Gessner. Ger. patent application G 102 060, Aug. 1, 1940. PB L 74390; frames 3930-3936. *Bibl. Sci. Ind. Reports 6*, 1033 (Sept. 12, 1947); Price: Enlargement print $1.50; *in German.*

Suction device for spinning machines. Giulio Zuppinger. Ger. patent application Z 27 222, July 29, 1942. PB L 74390; frames 3904-3908. *Bibl. Sci. Ind. Reports 6*, 1033 (Sept. 12, 1947); Price: Enlargement print $1.50; *in German.*

Drawings included.

Thread guide for wet ring spinning frames. Ger. patent application L 114 358 VII/76c, Apr. 25, 1944. PB L 74390; frames 4004-4007. *Bibl. Sci. Ind. Reports 6*, 1033 (Sept. 12, 1947); Price: Enlargement print $1.50; *in German.*

Drawings included.

Weight arrangement for drawing rollers of flyer frames. Marboli, Fratelli & Co. Ger. patent application M 150 851, May 15, 1941. PB L 74390; frames 3969-3983. *Bibl. Sci. Ind. Reports 6*, 1033 (Sept. 12, 1947); Price: Enlargement print $1.50; *in German.*

Drawings included.

Weighting motion for the drafting rollers of ring spinning frames and other textile machines. Schofield. Indian P. 34 428 (through *J. Sci. Ind. Research (India)*).

Winding and spooling B 5

Automatic cop winder. W. Schlafhorst & Co. Ger. patent application Sch 104 100, Feb. 3, 1942. PB L 74390; frames 3829-3834. *Bibl. Sci. Ind. Reports 6*, 1032 (Sept. 12, 1947); Price: Enlargement print $1.50; *in German.*

Automatic winder with device for feeding broken yarn ends. W. Schlafhorst & Co. Ger. patent application Sch 123 421, Oct. 17, 1941. PB L 74390; frames 3773-3780. *Bibl. Sci. Ind. Reports 6,* 1032 (Sept. 12, 1947); Price: Enlargement print $1.50; *in German.*

Bobbin. Firma J. Arthur Gläser. Ger. patent application G 106 920, Feb. 1, 1943. PB L 74390; frames 3847-3853. *Bibl. Sci. Ind. Reports 6,* 1032 (Sept. 12, 1947); Price: Enlargement print $1.50; *in German.*

Bobbin exchange mechanism for winding frames. Firma Halstenbach & Co. Ger. patent application H 166 527, Dec. 11, 1937. PB L 74390; frames 3755-3758. *Bibl. Sci. Ind. Reports 6,* 1032 (Sept. 12, 1947); Price: Enlargement print $1.50; *in German.*

Bobbin sorting apparatus. Louis M. Cotchett (to Foster Machine Co.). USP 2 459 309, Jan. 18, 1949.

In sorting bobbins containing residual yarn or thread from bobbins containing no residual yarn or thread, a conveying means is provided for directing the bobbins to be sorted to a sorting station where detecting means engage a bobbin and progressively explore its surface. The bobbins containing residual yarn are then directed in one direction, and those containing no residual yarn are directed in another.

Brake for creel bobbins of winders used for twine balls. Breslauer Hanfwerke. Ger. patent application B 197 981, Apr. 22, 1942. PB L 74390; frames 3845-3846. *Bibl. Sci. Ind. Reports 6,* 1032 (Sept. 12, 1947); Price: Enlargement print $1.50; *in German.*

Drawings included.

Cop winder. Halstenbach & Co. Ger. patent application H 174 288 VII/76d, June 10, 1944. PB L 74390; frames 3854-3864. *Bibl. Sci. Ind. Reports 6,* 1032 (Sept. 12, 1947); Price: Enlargement print $1.50; *in German.*

Cop winder operated by means of a progressive step by step motion of a grooved drum. W. Schlafhorst & Co. Ger. patent application Sch 161 970, Feb. 13, 1941. PB L 74390; frames 3767-3772. *Bibl. Sci. Ind. Reports 6,* 1032 (Sept. 12, 1947); Price: Enlargement print $1.50; *in German.*

Cop winder with independently operating bobbins. W. Schlafhorst & Co. Ger. patent application Sch 115 816, May 24, 1938. PB L 74390;

frames 3781-3789. *Bibl. Sci. Ind. Reports 6,* 1032 (Sept. 12, 1947); Price: Enlargement print $1.50; *in German.*

Addition to patent application Sch 108 182 VII/76d.

Cross winding frame. W. Schlafhorst & Co. Ger. patent application Sch 125 648, Sept. 7, 1942. PB L 74390; frames 3901-3903. *Bibl. Sci. Ind. Reports 6,* 1033 (Sept. 12, 1947); Price: Enlargement print $1.50; *in German.*

Device for rewinding remaining yarn from used cops. Hanf-, Jute-und Textilit-Industrie, A. G. Ger. patent application H 172 061, July 10, 1943. PB L 74390; frames 3826-3828. *Bibl. Sci. Ind. Reports 6,* 1032 (Sept. 12, 1947); Price: Enlargement print $1.50; *in German.*

Device for unreeling yarn cakes, flanged bobbins, etc. Albert Brugger. French P. 925 295, Mar. 24, 1947 (through *Bull. de L'Institut Textile*).

This device consists of a part which turns freely around the spindle which supports the cake. The revolving part carries arms which can be regulated axially or radially. It avoids the inconveniences of the systems now in use and reduces the breakage of the yarn.

Disc-like bobbin. Gehr. Büning, Leinen-Baumwoll- und Gebildweberei. Ger. patent application B 200 487, Nov. 15, 1942. PB L 74390; frames 3759-3761. *Bibl. Sci. Ind. Reports 6,* 1032 (Sept. 12, 1947); Price: Enlargement print $1.50; *in German.*

Disconnecting device for a reeling apparatus. Vereinigte Glanzstoff-Fabriken A. G. Ger. patent application V 36 992, Sept. 19, 1940. PB L 74390; frames 3842-3844. *Bibl. Sci. Ind. Reports 6,* 1032 (Sept. 12, 1947); Price: Enlargement print $1.50; *in German.*

Flange for bobbins without outside discs. Semperit Gummiwerke A. G. Ger. patent application dated Mar. 14, 1944. PB L 74390; frames 3840-3841. *Bibl. Sci. Ind. Reports 6,* 1032 (Sept. 12, 1947); Price: Enlargement print $1.50; *in German.*

Movable winder for small knitting and weaving plants. Otto Lorenz. Ger. patent application L 108 884 VII/76d, Sept. 1, 1942. PB L 74390; frames 3823-3825. *Bibl. Sci. Ind. Reports 6,* 1032 (Sept. 12, 1947); Price: Enlargement print $1.50; *in German.*

Spooling. Abbott Machine Co. French P. 918 493,

Oct. 28, 1946 (through *Bull. de L'Institut Textile*).

This method of spooling is especially important for spooling on ring spinning or twisting frames and consists in superimposing layers of cross-wound yarn with layers of yarn wound by to-and-fro motion. The cross-winding forms a band between the 2 ends of the bobbin and the space between these bands is filled by the to-and-fro winding movement.

Spooling machine. Abbott Machine Co. French P. 919 115, Nov. 18, 1946 (through *Bull. de L'Institut Textile*).

The taper of yarn cones is increased by means of a novel connection between the cone carrier, the pulley which drives the bobbin, and the arm supporting the cone carrier. The winding cone is maintained in contact wth the driving pulley by means of a cone carrier which is inclined in relation to the pulley. This inclination is sufficient to cause the axis of the cone carrier to progressively approach a plane passing through the axis of the driving pulley.

System of spooling and utilization of yarn. Abbott Machine Co. French P. 919 540, Nov. 25, 1946 (through *Bull. de L'Institut Textile*).

A current of air is passed through a tubular space across a diaphragm. The tube is supported on a casing, the interior of which is maintained at reduced pressure. The yarn enters the tube, forming a coil. The difference in air pressure (higher at the open end of the tube and lower at the base) renders the mass of the yarn more compact and draws each coil to the less thick parts of the mass being formed. If the upper and lower parts have a flat form and there is no core, the mass thus obtained has the maximum capacity compatible with the cross formation of the coil. The mass of yarn may be used directly for dyeing, finishing and for feeding knitting and braiding machines.

Traverse winding frame with precision winding. J. H. Bek & Co. Ger. patent application B 199 926, Oct. 15, 1942. PB L 74390; frames 3517-3526. *Bibl. Sci. Ind. Reports 6,* 1030 (Sept. 12, 1947); Price: Enlargement print $1.50; *in German.*

Drawings included.

Universal spooling machine. Claude Laurent & Francois Bergeron. French P. 924 007, Mar. 3, 1947 (through *Bull. de L'Institut Textile*).

This machine contains only simple elements but is capable of performing different types of windings without complicated movements. A braking device is provided for the elements which are rendered idle by the breaking of the yarn. Among the various features are: the to-and-fro movement communicated to the thread guide, the regulation of the course of the thread-guide carriage by means of an accurate micrometric screw, the regulation of the winding movement for spooling in regular spirals effected by the displacement of a gear rack or the rotation of a fly wheel, and the simplified connecting and disconnecting of the driving pulley.

Variation of speed, a factor in high efficiency. P. Carpentier. *Rayonne,* 147, 149, 151 (Apr. 1948); *in French* (through *Bull. de L'Institut Textile*).

The characteristics essential to a variable speed mechanism and the reasons which make it essential to the efficiency of certain machines are discussed.

Winder. W. Schlafhorst & Co. Ger. patent application Sch 119 472 VII/76a, Nov. 8, 1939. PB L 74390; frames 3875-3890. *Bibl. Sci. Ind. Reports 6,* 1033 (Sept. 12, 1947); Price: Enlargement print $2.00; *in German.*

Winder. W. Schlafhorst & Co. Ger. patent application Sch 119 530 VII/76d, Nov. 21, 1939. PB L 74390; frames 3814-3822. *Bibl. Sci. Ind. Reports 6,* 1032 (Sept. 12, 1947); Price: Enlargement print $1.50; *in German.*

Drawings included. Addition to patent application Sch 119 472 VII/76d.

Winder for manufacturing cross wound bobbins. Barmer Maschinenfabrik A. G. Ger. patent application B 196 336, Dec. 4, 1941. PB L 74390; frames 3891-3895. *Bibl. Sci. Ind. Reports 6,* 1033 (Sept. 12, 1947); Price: Enlargement print $1.50; *in German.*

Winder with automatic change of bobbins. W. Schlafhorst & Co. Ger. patent application Sch 124 868 VII/76d, May 14, 1942. PB L 74390; frames 3799-3804. *Bibl. Sci. Ind. Reports 6,* 1032 (Sept. 12, 1947); Price: Enlargement print $1.50; *in German.*

Drawings included.

Winder with automatic change of bobbins. Ger. patent application Sch 124 869 VII/76d, May 14, 1942. PB L 74390; frames 3793-3798. *Bibl. Sci. Ind. Reports 6,* 1032 (Sept. 12, 1947); Enlargement print $1.50; *in German.*

Addition to patent application 119 472 VII/76d.

Winder with independently operating winding arrangements. W. Schlafhorst & Co. Ger. pat-

ent application Sch 124 068 VII/76d, Jan. 28, 1942. PB L 74390; frames 3805-3813. *Bibl. Sci. Ind. Reports 6*, 1032 (Sept. 12, 1947); Price: Enlargement print $1.50; *in German.*

Winding frame with tubular cops. E. Kühnel. Ger. patent application K 161 405, June 14, 1941. PB L 74390; frames 3762-3766. *Bibl. Sci. Ind. Reports 6*, 1032 (Sept. 12, 1947); Price: Enlargement print $1.50; *in German.*

Winding machine. Chas. D. Jencks & Robt. H. Lawson (to Walter Kidde & Co., Inc.). USP 2 459 167, Jan. 18, 1949.

Thread packages of rayon or other fine synthetics may be automatically wound at high speed with more exact control of density and accuracy in size, shape, and contents than has been possible heretofore by a process which comprises directing thread to a rotating package, maintaining a control roll adjacent to the surface of the package, and retracting the roll from actual contact with the package by the action of gravity, a spring, electric, pneumatic, or hydraulic means from time to time as the surface of the growing package meets the roll.

Yarn accumulation with moving bowl. W. Schlafhorst & Co. Ger. patent application Sch 125 998, Oct. 29, 1942. PB L 74390; frames 3790-3792. *Bibl. Sci. Ind. Reports 6*, 1032 (Sept. 12, 1947); Price: Enlargement print $1.50; *in German.*

Yarn cleaner particularly for winders. Zellwolle-Lehrspinnerei. GmbH. Ger. patent application Z 27 850, Apr. 6, 1943. PB L 74390; frames 3896-3900. *Bibl. Sci. Ind. Reports 6*, 1033 (Sept. 12, 1947); Price: Enlargement print $1.50; *in German.*

Drawings included.

Yarn-guide on winders for producing tubular cops. W. Schlafhorst & Co. Ger. patent application Sch 124 980 VII/76d, May 29, 1942. PB L 74390; frames 3835-3839. *Bibl. Sci. Ind. Reports 6*, 1032 (Sept. 12, 1947); Price: Enlargement print $1.50; *in German.*

Yarn package holders of yarn winding machines of the cross winding type. Dixon, Hawkesworth Ltd. Indian P. 36 921 (through *J. Sci. Ind. Research (India)*).

Yarn tensioning devices. Dixon, Hawkesworth Ltd. Indian P. 36 922 (through *J. Sci. Ind. Research (India)*).

Yarn processing B 6

Treatment of yarns or cords comprising cellulose filaments to improve their physical properties. Dunlop Rubber Co. Ltd. & Dunlop Cotton Mills Ltd. Indian P. 33 832 (through *J. Sci. Ind. Research (India)*).

Coating and/or impregnating threads with synthetic resins and an apparatus therefor. Lodge. Indian P. 35 344 (through *J. Sci. Ind. Research (India)*).

According to this invention, a number of threads are drawn off bobbins so that they travel in parallel formation at suitably spaced distance apart.

Fabrication of yarns and products resulting from it. E. I. du Pont de Nemours & Co. French P. 926 627, Apr. 21, 1947 (through *Bull. de L'Institut Textile*).

A strongly twisted and sized yarn is produced from synthetic linear polymers with a twist less than 2 turns per cm by a continuous operation in which the filament is sized in a mixture of partially hydrolyzed polyvinyl acetate, boric acid, and polyethylene glycol, dried to less than 12% humidity, then twisted to more than 6 turns per cm. For nylon, the twist is less than 2 turns per cm and sizing is carried out at a tension of 0.15 g per denier.

Measurement of tension in the production of filaments with high wet strength by cable stretching. E. Husung. *Melliand Textilber. 29*, 157-9 (May, 1948); *in German.*

An apparatus which employs a differential gear and was patented in 1944 by the Spinnfaser A. G., of Kassel, was used to control and measure tension. The cable to be stretched must not slip. The apparatus can be used to demonstrate the absence of slip by changing the gearing. It is used in the production of rayon staple fiber by stretching in a warm bath.

Method and apparatus for liquid treatment of porous cakes or packages of rayon or other thread-like material. Oscar Kohorn & Co. Ltd. Indian P. 36 230 (through *J. Sci. Ind. Research (India)*).

Reducing liveliness of twisted filamentary yarns. Industrial Rayon Corp. Indian P. 33 533 (through *J. Sci. Ind. Research (India)*).

Yarn products B 8

Cords for venetian blinds, consisting of wires and

threads of polyamide. I. G. Farbenindustrie A. G. Registered design 1517 377/34c, Mar. 5, 1942. PB L 70411; frames 345-346. *Bibl. Sci. Ind. Reports 6,* 1121 (Sept. 19, 1947); Price: Enlargement print $1.50; *in German.*

Method and mechanism for the manufacture of thread. Carl Hamel A. G. Ger. patent application H 164 472, Dec. 22, 1940. PB L 74390; frames 3920-3926. *Bibl. Sci. Ind. Reports 6,* 1033 (Sept. 12, 1947); Price: Enlargement print $1.50; *in German.*

Drawings included.

Method and mechanism for manufacturing thread, particularly crepe thread made of rayon or staple fiber. Gahlert und Söhne. Ger. patent application G 105 250, Apr. 15, 1942. PB L 74390; frames 4030-4040. *Bibl. Sci. Ind. Reports 6,* 1034 (Sept. 12, 1947); Price: Enlargement print $1.50; *in German.*

Drawings included.

Nymo . . . a revolutionary monocord nylon thread. Anon. *Textile Colorist 70,* 24, 53 (Dec. 1948).

Nymo monocord consists of an untwisted bundle of nylon filaments welded together by a new process which eliminates the usual ridges and spirals of conventional threads. It will not kink, snarl, split, or ravel, and almost any fiber, natural or synthetic, may be used. "Nymo", the name given the first thread, which is made of nylon fibers, is smaller in diameter than usual threads, and possesses unusual strength which will eliminate the need for double stitching. Further, monocord's neutral shade will make it available for all-purpose sewing.

Process for preparing impregnated textile thread. Rolf Heille. Ger. P. 749 220, Nov. 1944. PB L 70147; frames 432-434. *Bibl. Sci. Ind. Reports 6,* 1105 (Sept. 15, 1947); Price: Enlargement print $1.50; *in German.*

THE PRACTICAL ROPE MAKER. Geo. Lawrie. Belfast, H. R. Carter Publications Ltd., 1948. 120 pp.

Mechanical details are given of the machines used, calculations are explained and examples provided. There are descriptions of the methods of working, and the book is provided throughout with many photographs, sketches and production tables which greatly amplify the text. The first 15 chapters are arranged in the logical sequence of mill operations starting with the opening of bales and ending with packaging and winding. Chapters 16 and 17 give notes on costing and a mass of useful tables and formulae which could

not be introduced conveniently into the body of the work without interfering with the flow of the text. In addition, 3 comprehensive glossaries are provided—one of cordage fibers (probably the most complete ever compiled), a second of cordage products, and a third of the terminology of cordage usage.—*Cord Age.*

FABRIC PRODUCTION C

Device for laterally guiding a breadth of textile. Siemens-Schuckertwerke A. G. Ger. P. 725 323, Feb. 1, 1940. PB L 70265; frames 13-14. *Bibl. Sci. Ind. Reports 6,* 1087 (Sept. 19, 1947); Price: Enlargement print $1.50; *in German.*

Supplement to Ger. P. 682 250.

Device for steering the edges of a breadth of fabric or paper. Allgemeine Elektricitaetsgesellschaft. Ger. P. 736 136, Mar. 22, 1940. PB L 70265; frames 118-120. *Bibl. Sci. Ind. Reports 6,* 1089 (Sept. 19, 1947); Price: Enlargement print $1.50; *in German.*

Device for straightening out fabrics. Rudolf Horn. Ger. P. 729 728, Jan. 3, 1941. PB L 70265; frames 23-25. *Bibl. Sci. Ind. Reports 6,* 1088 (Sept. 19, 1947); Price: Enlargement print $1.50; *in German.*

Supplement to Ger. P. 637 601.

Executing auxiliary motions on textile machines. Sulzer Freres, S. A. Indian P. 34 254 (through *J. Sci. Ind. Research (India)*).

Thread controlling apparatus in textile machines. F. N. F. Ltd. Indian P. 36 759 (through *J. Sci. Ind. Research (India)*).

Yarn preparation C 1

Creels for warping and similar machines. Dixon, Hawkesworth Ltd. Indian P. 36 920 (through *J. Sci. Ind. Research (India)*).

Vertical members being clamped to horizontal members by brackets which can be clamped in any desired position.

Device in air drying sizing chambers for preventing the adhering of the warp fibers onto the guide rollers. Maschinenfabrik Rüti. Ger. P. 749 048, Nov. 1944. PB L 70147; frames 125-127. *Bibl. Sci. Ind. Reports 6,* 1100 (Sept. 19, 1947); Price: Enlargement print $1.50; *in German.*

Drawing included.

Dry starch preparations soluble in cold water. W. A. Scholten's Chemische Fabriken. Indian P. 34 905 (through *J. Sci. Ind. Research (India)*).

Dry starch products soluble in cold water. Naamlooze Vennootschap, W. A. Scholten's Chemische Fabriken. Indian P. 34 012 (through *J. Sci. Ind. Research (India)*).

Electrically-driven, moisture-controlled slasher. E. J. Eaddy, Textile Shops. *Textile Bull. 74*, 71-2, 73 (June, 1948).

In an address, the features of the all-electric driven Moist-O-Graph controlled slasher are noted and its operation described.

Improved process for making hydrosols from starches and products obtained. Encophi S.A. R.L. French P. 928 459, June 2, 1947 (through *Bull. de L'Institut Textile*).

Amylaceous substances are improved for use as sizes or finishes by adding an organo-alkaline complex such as (a) a non-foaming wetting agent (a mono- or dihydroxy alcohol of the acyclic, alicyclic, or hetrocyclic series), (b)an alkaline substance (NaOH or KOH) or (c) a hygroscopic substance (polyhydroxy alcohol or a mixture of urea, sodium lactate or phosphate) before cooking and neutralizing the product after cooking with formic or acetic acid. The pH is thus regulated so as to obtain an osmotic pressure which favors the absorption of the size.

Sized glycol terephthalate yarn, process, and composition for producing same. Richard J. Smith (to Imperial Chemical Industries Ltd.). USP 2 459 052, Jan. 11, 1949).

A process for the sizing of aromatic polyester yarns of the terephthalate class comprises impregnating them with a mixture of partially hydrolyzed polyvinyl acetate, boric acid, barium chloride, and condensation resins. The amount of boric acid which may be used will usually be from 5-25% by weight of the weight of the partially hydrolyzed polyvinyl acetate. On this same basis, the amount of barium chloride will vary from 5-40%. The resin may be used in combination with the above materials or it may be used with the partially hydrolyzed polyvinyl acetate alone. In the latter case, it may be equal portions of the 2 ingredients. A solution from 2-12% total solids content is recommended. The yarn is sized by means of a "bobbin-to-bobbin" type machine in which the yarn passes over a rotating cylindrical roll dipping in the sizing composition.

LCL

Textile wax compositions. Geo. D. Jefferson (to Atlas Powder Co.). USP 2 456 283, Dec. 14, 1948.

Hydrocarbon waxes are claimed to be rendered more useful for textile size application by incorporating in the wax an emulsifying agent and a coupling agent so that the mixture can be readily scoured from the fabric with water. The emulsifier used is a polyoxyethylene ether ester of a straight chain monobasic, aliphatic acid having at least 12C atoms and not more than one unsaturated carbon to carbon bond which is soluble or dispersible in water. Examples of these emulsifiers are the polyethyleneglycol esters of the fatty acids and similar materials. The coupling or blending agent is selected from a class of straight-chain, monobasic, aliphatic acids with at least 12 C atoms and no more than one unsaturated carbon to carbon linkage. Examples of coupling agents given include stearic acid, lauric acid, oleic acid, etc. An example of the composition used is 40-70% white crude scale wax, 10-40% stearic acid and 6-30% of a polyglycol monostearate.

LCL

Weaving warp yarns with different sizing treatments. M. G. Booy. *Rayonne IV*, 51, 53, 55 (Jan. 1948); *in French* (through *Bull. de L'Institut Textile*).

A design for the outlet of a sizing machine and advice on the weaving of material sized by different methods are given.

Weaving C 2

Apparatus operable during the starting and stopping operations of looms. Nicoll. Indian P. 34 682 (through *J. Sci. Ind. Research (India)*).

A clutch between the picking mechanism and main drive opens automatically to render the picking mechanism inoperative during starting and stopping of the loom.

Automatic loom developments increase weaving efficiencies. W. Barker, Ashton Bros. & Co. Ltd. *Textile Mfr. 75*, 3-8 (Jan. 1949).

Features of British automatic looms are described and illustrated with drawings and photographs.

Circular loom. Saint Freres. Indian P. 38 982 (through *J. Sci. Ind. Research (India)*).

Designing patterns for the dobby loom similar to Jacquard designs. Gebhard Rammer. *Melli-*

and Textilber. 29, 160-61 (May, 1948); 267-8 (Aug. 1948); *in German.*

Nineteen jacquard designs are shown which can be woven on the dobby loom. It is stated that these are only a few examples of the possibilities of this new weaving technique.

Devices for producing looped fabrics. Luchsinger's Handelsgesellschaft, Amsterdam. Indian P. 36 440 (through *J. Sci. Ind. Research (India)*).

Driving device of warp frames for looms. Picanol. Indian P. 36 389 (through *J. Sci. Ind. Research (India)*).

Factors to be considered when weaving "Celanese" yarns. W. H. Levers, Brit. Celanese Ltd. *Textile Mfr. 75*, 15-7, 43 (Jan. 1949).

This is a detailed discussion of the factors affecting the weaving of Celanese yarns. Looms, lease rods, heddles, reeds, warps, shuttles, and filling are some of the topics considered, and suggested techniques of weaving are given.

Improvement in looms. Aimé Rebora. French P. 931 128, Sept. 22, 1947 (through *Bull. de L'Institut Textile*).

The system of weights used on looms is replaced by a system of springs which makes it possible to regulate the tension without stopping the loom. The device consists of a balance wheel turning on a fixed axis and connected to the part which holds the warp under tension. This balance wheel is connected to a spring, the tension of which can be regulated by means of a threaded shaft.

Improvements in the reeds of looms for weaving gauze. M. Banyai Ltd., & M. Maurus Banyai. French P. 927 225, Apr. 28, 1947 (through *Bull. de L'Institut Textile*).

A series of dents with eyelets are placed between the dents of the main reeds so that they press against them. This avoids the disadvantages of the ordinary reeds used in looms for weaving gauze when the yarns are larger than are normally used.

Method and apparatus for forming a sliver from textile fiber. Pacific Mills. Indian P. 36 236 (through *J. Sci. Ind. Research (India)*).

Narrow ware loom. Max Hahne. USP 2 459 814, Jan. 25, 1949.

This device employs a horizontally movable batten carrying a number of vertically movable shuttles mounted for gravitational descent to carry the weft threads across the warp. The fabric is

woven with the plane of the produced fabric disposed vertically, whereby the shuttles may be carried downwardly by gravity. A number of fabrics of similar design may be woven simultaneously.

Pneumatic thread control for looms. Richard G. Turner (to Crompton & Knowles Loom Works). USP 2 457 952, Jan. 4, 1949.

In a weft replenishing loom, a pneumatic device is provided for removing the ends of threads from outgoing and incoming bobbins. The device is attached to the lay, and operates in cooperation with the thread cutter and clamp. The mechanism operates in such a manner as to clear itself of the threads incident to any given transfer before acting on the threads of the next transfer.

Pneumatic thread holder for weft replenishing looms. Richard G. Turner (to Crompton & Knowles Loom Works). USP 2 457 954, Jan. 4, 1949.

Improvements in pneumatic thread holders, which utilize a reciprocating air pump to create subatmospheric pressures, during backward movement of the lay, within a thread holder into which the weft ends extend, comprise an auxiliary air cylinder or chamber to continue the condition of subatmospheric pressures within the thread holder after the air pump has completed its backward stroke. This is accomplished by connecting the auxiliary chamber in such manner that it can be partially evacuated during the working stroke of the pump and then become effective to draw air into the thread holder while the air pump is having its idle or return stroke.

Shedding means for circular looms for weaving. Cooper. Indian P. 36 555 (through *J. Sci. Ind. Research (India)*).

Shuttle guards for looms. Boardman & Baron Ltd. Sim & Sim. Indian P. 37 171 (through *J. Sci. Research (India)*).

Sley motion for looms for weaving. Marsden. Indian P. 34 897 (through *J. Sci. Ind. Research (India)*).

This invention provides for effecting beating-up by sley through connecting rods constructed in the form of toggle arms.

Spooling machine. Abbott Machine Co. French P. 919 772, Dec. 9, 1946 (through *Bull de L'Institut Textile*).

The feed mechanism of spoolers is improved and simplified by means of a device which causes a relative displacement between the units of spooling and the stop which shifts the zone of the to-

and-fro motion progressively from the bar to the tip of the bobbin being wound.

Thread control for bobbins in magazines. Richard G. Turner (to Crompton & Knowles Loom Works). USP 2 457 955, Jan. 4, 1949.

To prevent the unwinding of the coils of yarn on the conical ends of bobbins while the bobbins are held in the reserve bobbin magazine, endless belts of natural or artificial fur are provided to press against the conical ends of the bobbins and hold the coils of yarn thereon. The fur, or other deformable material, on the endless belts is cut obliquely so as to conform with the angle of the yarn on the bobbin. Knots and tangles resulting from the slipping of the coils of yarn are thus eliminated.

Thread cutter for pneumatic thread receivers for looms. Richard G. Turner (to Crompton & Knowles Loom Works). USP 2 457 956, Jan. 4, 1949.

In the pneumatic thread control system for the weft ends of reserve bobbins in a weft- replenishing loom, the removal of collected threads is facilitated by means of a door on the receiving chamber. A cutting means is provided for severing the threads at the door. The cutting means is normally unexposed and must be moved to the exposed cutting position by the weaver, thus eliminating the danger of injury to the operative.

Thread cutter for weft replenishing looms. Richard G. Turner (to Crompton & Knowles Loom Works). USP 2 457 953, Jan. 4, 1949.

An improved thread cutter for weft replenishing looms comprises means for controlling the cutter in such manner that its rearward movement toward the shuttle will be faster than that which has been possible heretofore. An earlier cutting is thus effected and this enables the outgoing bobbin to remove its weft end from the shuttle eye. The faster rate of cutting which results insures successful operation with a wide variety of weft yarns.

Warp let-off motions of looms for weaving. Lakeland. Indian P. 37 531 (through *J. Sci. Ind. Research (India)*).

Weft feeding apparatus for looms. Baddeley. Indian P. 35 341 (through *J. Sci. Ind. Research (India)*).

According to this invention, thread guides upon the sley or reed cooperate with relatively stationary thread guides in proximity to the loom frame to draw off weft.

Knitting C 3

Circular knit fabric suitable for boarding. Scott & Williams, Inc. Indian P. 34 268 (through *J. Sci. Ind. Research (India)*).

Circular knit hosiery. Scott & Williams, Inc. Indian P. 34 360 (through *J. Sci. Ind. Research (India)*).

Electric stop motion for flat knitting machine. G. J. M. M. Cochet & V. F. Schnetzer. French P. 931 488, Oct. 27, 1947 (through *Bull. de L'Institut Textile*).

The device is mounted on the carriage and passes behind the thread guides at the end of the course through a system of hinges. When an accident happens, the point of the needle of the device catches and causes the machine to stop. To start it again, it is necessary only to push a lever.

Have we a scientific theory of the construction of knitted fabrics? Lorenz Friedl. *Melliand Textilber. 29*, 122-4 (Apr. 1948); *in German.*

The theory of interlacing yarns is reviewed and the need for a uniform method for representing the various fabrics graphically is pointed out. Two methods of designing are described and their advantages and disadvantages in mill practice and in instructional courses are discussed.

Hosiery knitting machine. H. H. Holmes & A. P. Saunders (to Wildt & Co. Ltd.). Australian P. 130 513, Jan. 27, 1944.

The picker system described in patent 117 358 includes a stitch or knocking over cam adapted to be rendered inactive, as regards knitting, during reciprocatory knitting to enable the inactive needles to go without reverting to the knocking over position. This patent describes an auxiliary knitting cam system for reciprocatory knitting, an additional series of butts on or in association with needles intended to be active during reciprocatory knitting and packs to position the butts for engagement with the auxiliary knitting cam system. The butts corresponding with jacks assume inoperative position to avoid engagement with the auxiliary cam system. The butts in operative position engage the cam.

Improvements in the fixing of needles in textile machinery, etc. F. Laroche and Sons, S.A.R.L. French P. 930 162, July 28, 1947 (through *Bull. de L'Institut Textile*).

The needle-carrying plates are drilled with conical holes, in which there are lodged conical plugs pierced with a hole corresponding in diameter to

the diameter of the needle, and split radially. When the plug is wedged into its position, it contracts, causing a strong clamping of the needle.

Jacquard fabric and its application to circular rib footwear. H. Wignall. *Textile Mfr. 75,* 13-4 (Jan. 1949).

The production of jacquard design footwear on the Komet (Model JL) machine is discussed in detail.

Knitted footwear. Roy. Indian P. 36 301 (through *J. Sci. Ind. Research (India)*).

Knitting machine attachment. Frank G. Weisbecker. USP 2 460 050, Jan. 25, 1949.

On full-fashioned hosiery knitting machines, a draw-off, or take-up, mechanism is provided which eliminates the need for a special attaching clip on one end of the strap. The device comprises a cylindrical member having annular grooves at each end somewhat wider than the width of the strap to be fastened therein. A pin is secured to the outer wall of each groove whereby an end loop of the work take-up strap may be detachably connected to the pin over its free end.

Rectilinear looms for knitted fabrics. Moreau. Serra & Autran. Indian P. 35 408 (through *J. Sci. Ind. Research (India)*).

In a rectilinear loom for knitted fabrics, the actuating member used is a cylindrical drum rotatable about its axis parallel with the row of needles.

Stockings from silk and rayon with chemical reinforcement by synthetic resins. Bernd Ludwig. Registered design 1519 562/8k, Oct. 15, 1941. PB L 70411; frame 834. *Bibl. Sci. Ind. Reports 6,* 1126 (Sept. 19, 1947); Price: Enlargement print $1.50; *in German.*

Structure of the cushion sole. H. Wignall. *Textile Mfr. 74,* 555-6 (Dec. 1948).

The structure of half-hose with a cushion sole, a terry-type covering inside the foot of the sock, is discussed. A detailed description of its production on U. S. machines is given, and possible methods which could be used on British machinery are noted.

Types of needles and jacks used in French circular looms. Anon. *Melliand Textilber. 29,* 90-2 (Mar. 1948); *in German.*

The needles for plain and fancy goods vary in thickness according to the gage of the frame and are of various shapes. Four types are described and illustrated. Six types of jacks are also described and illustrated, in addition to the knock-

ing-over jacks, the shape of which is practically the same for all of the machines.

Special fabrics C 4

Attachment of helically wound wire-coils to edges of woven fabrics. Clutsom & Kemp Ltd. & Clutsom. Indian P. 38 543 (through *J. Sci. Ind. Research (India)*).

Composite fabric. Dunlop Rubber Co. Ltd. Indian P. 30 723 (through *J. Sci. Ind. Research (India)*).

Cut-edge fabric. Wagner & Auerbach. Indian P. 35 722 (through *J. Sci. Ind. Research (India)*).

Durable launderable linen. Deutsche Celluloid Fabrik. Ger. P. 749 221, Nov. 1944. PB L 70147; frames 435-436. *Bibl. Sci. Ind. Reports 6,* 1105 (Sept. 19, 1947); Price: Enlargement print $1.50; *in German.*

Forming a design by combining fabrics. A. Fülle. *Melliand Textilber. 29,* 196-8 (June, 1948); *in German.*

Methods of producing designs by superposing various cloth patterns are outlined and illustrated with 18 diagrams. These designs can be used to advantage in card cutting.

Laces and method of manufacturing the same. Reiter. Indian P. 36 687 (through *J. Sci. Ind. Research (India)*).

Plush from rayon. N. V. Hollandsche Kunstzijde Industrie. Registered design 1519 876/96d, Mar. 28, 1942. PB L 70411; frame 913. *Bibl. Sci. Ind. Reports 6,* 1127 (Sept. 19, 1947); Price: Enlargement print $1.50; *in German.*

Production of narrow fabrics woven on the bias. Otto Pennekamp. *Melliand Textilber. 29,* 120-2 (Apr. 1948); *in German.*

Narrow fabrics must have tight edges. For this reason, they cannot be made by simply splitting broad fabrics into longitudinal strips, and no satisfactory adhesive has been found for fastening the cut edges. However, by cutting a wide fabric on the bias, a strip is produced which not only has sufficiently stable edge, but which is also elastic. A machine for cutting several thicknesses of fabric diagonally is described. Numerous applications of the strips are listed.

Smooth fabric. Jos. Dubost. French P. 927 957, May 19, 1947 (through *Bull. de L'Institut Textile*).

A lightly grained fabric, dull in all colors, resembling a pelt, with the flexibility and drape of crepe, is made of one thread of viscose rayon to one of acetate yarn, with a crimping wave. It contains 66 warp threads and 40 weft threads; 2 threads have the Z twist and two the S twist.

Inspection and testing C 5

Calculating the closeness of threads in a fabric. W. Wiechmann. *Melliand Textilber. 29,* 51-4 (Feb. 1948); *in German.*

Closeness of threads (setting) is calculated from the yarn count and the type of weave. Results of these calculations are tabulated and curves are drawn from which the setting can be read off.

Fabric applications C 6

Folded fabric gasket and method of manufacture. Emil J. Poltorak (to Johns-Manville Corp.). USP 2 459 720, Jan. 18, 1949.

A folded fabric gasket is protected from the action of strong chemicals by a thin, flexible jacket of insoluble heat-resistant material which does not impair the resilient qualities of the gasket while providing its exposed surfaces with a non-adherent, non-tacky covering. The folded fabric is preferably constructed of woven asbestos, saturated or impregnated with natural or synthetic rubber. The protective tape may be made of polyterafluor ethylene.

Jute fabrics particularly applicable to carpets, rugs and the like. The Nuddea Mills Co. Ltd. Indian P. 37 310 (through *J. Sci. Ind. Research (India)*).

Manufacture of shaped textile materials. Geo. Schneider & Alfred J. Steinberger (to Celanese Corp. of Am.). USP 2 459 291, Jan. 18, 1949.

Shaped textile materials, e.g., hats, may be made without using size or lacquer by employing fabrics, ribbons, or braids of plasticized textile materials made of or containing a thermoplastic organic derivative of cellulose (e.g., cellulose acetate). The formed textile materials are treated with a solution of a plasticizer for the organic derivative of cellulose in a volatile solvent for the plasticizer; the plasticized textile material is then dried, the plasticizer extracted and the materials processed to shape. The plasticizer may be a solution of dimethoxy ethyl phthalate in isopropyl alcohol.

STANDARD FINISHING D

Bleaching process. E. I. du Pont de Nemours & Co. Indian P. 35 466 (through *J. Sci. Ind. Research (India)*).

This process comprises treating the material with alkaline solution, removing the excess alkali, and finally steaming with steam air blast for an hour.

Detergent materials. I. Surface activity and detergent action. Kurt Lindner. *Melliand Textilber. 29,* 203-9 (June, 1948); *in German.*

Variation of surface tension with concentration is shown by means of curves for a number of detergents, and the interfacial tension against paraffin for some of the same substances was likewise plotted against concentration of the detergent. It is concluded that the ability of a detergent to remove dirt cannot be determined by measuring surface tension or interfacial tension, but that a substance is probably a good detergent if it has a high surface tension or interfacial at dilutions of approximately 2 g per liter.

Determination of surface active agents in solution. T. Barr, J. Oliver, & W. V. Stubbings, Imperial Chemical Industries. *J. Soc. Chem. Industry 67,* 45-8 (Feb. 1948).

A simple, quick, and accurate method for determining either anion- or cation-active compounds was developed at the ICI Dyehouse Laboratories and Analytical Laboratories. It was found that the concentration of an anion-active solution could be determined by titration with a cation-active solution. With chloroform and the basic dyestuff, methylene blue, added to the solution, the endpoint was determined by disappearance of color from the chloroform layer. The color change was sharp at pH 4 to 8, and in most cases electrolytes did not interfere. An improved method was devised with the acid dyestuff bromophenol blue as indicator, the endpoint in this case being the appearance of color in the chloroform layer as the cation-active agent is added. This endpoint was easy to observe, and results were nearly in the theoretical ratio when one anion-active agent was compared to another via an intermediate cation-active agent. By-products such as sulfonates in sulfates and oleates in oleyl sulfonates occasionally caused results to be higher than theoretical by 2-6%. Some surface-active agents were not accurately determined by this titration with partition endpoint; but for most substances the method proved easy and accurate even with unskilled operators, and was well suited for studies of absorption by textile

fibers and for control of continuous processing operations.

Drum drier. Julien Dungler. French P. 929 390, July 7, 1947 (through *Bull. de L'Institut Textile*).

The device consists of a rotating drum provided with a system of pipes for hot air placed around the drum so that they discharge at a short distance from its periphery. These air pipes are extensible or telescopic so that they can be adapted to the cloth being treated.

Experiments on bleaching with peroxide. W. Kind. *Melliand Textilber. 29,* 57-60 (Feb. 1948); 96-9 (Mar. 1948); *in German.*

Catalysis of the decomposition of hydrogen peroxide by heavy metals, especially copper, is an important source of error in bleaching experiments. Data are given on the rate of decomposition of H_2O_2 alone and in the presence of soda and magnesium silicate. The magnesium silicate acts as a stabilizer. Bleaching experiments were run in the presence of sulfuric and acetic acids, sodium bicarbonate, carbonate and hydroxide and the H_2O_2 consumed was measured. Only the alkaline solutions showed much bleaching. The strengths of linen, rayon, and mixed-yarn fabrics showed the greatest decreases when they were bleached with H_2O_2 and water or with H_2O_2, water, and acetic acid. It was concluded that peroxide bleaching solutions, like chlorine bleaches, have a danger zone in which fibers are damaged in the neighborhood of the neutral point. Some data are also given on the solubilizing of the various bleached fabrics in concentrated NaOH and on viscosities in copper ammonium hydroxide are also given.

Foam formation by detergents and textile aids. Ernst Götte. *Melliand Textilber. 29,* 65-8 (Feb. 1948); 105-08 (Mar. 1948); *in German.*

The physics and mathematics of foam formation and experimental methods used to measure foaming properties were reviewed. A method developed by I. G. Farbenindustrie A. G. (*Melliand Textilber. 18,* 812 (1937)) was adapted and improved. Data are given for volumes of foam produced by sodium alkyl sulfates, sodium alkyl sulfonates and the sodium salts of the normal fatty acids. The results are compared and discussed.

Enlarging mechanism, especially for wet hoses of woven and knit material. Heinrich Conzelmann. Ger. P. 742 075, May 6, 1941. PB L 70265; frames 246-249. *Bibl. Sci. Ind. Research 6,* 1090 (Sept. 19, 1947); Price: Enlargement print $1.50; *in German.*

Hydrogen peroxide and its uses in bleaching and decolorizing. Montecatini, S. A. *Tinctoria 45,* 11-5 (Jan. 1948); 45-6 (Feb. 1948); *in Italian* (through *Bull. de L'Institut Textile*).

Methods and materials for handling and storing H_2O_2 and an apparatus for bleaching with H_2O_2 are described. Formulas are given for its use in bleaching linen, cotton, wool, silk, hog bristle, hair, vegetable fibers, and buttons. It is recommended that sodium silicate or pyrophosphate be used in place of ammonia to increase the stability of the bleaching bath.

Process and composition for improving bleaching. Lever Bros. & Unilever Ltd. French P. 928 tion was employed the temperature being 48.8°C *tut Textile*).

Materials which are called white but really have a yellowish tinge are rendered truly white by treating with a small amount of a substance with a blue fluorescence mixed with a bleaching agent. The fluorescent substance used is an unsubstituted or substituted hydroxycourmarin, especially, umbelliferone (4-hydroxycoumarin) or beta-methyl umbelliferone.

Silicate of soda as detergent. Effect of single soaps and common builders on suds formation in hard water. Chas. H. Dedrick & John H. Wills, Phila. Quartz Co. *Ind. Eng. Chemistry 41,* 575-81 (Mar. 1949).

Previously reported data on the influence of various alkalis on the decrease in sodium oleate and stearate necessary to form a permanent suds in hard water are extended in this paper to cover sodium myristate, laurate, and palmitate and a commercial kettle soap. The permanent suds method of the American Public Health Association was employed, the temperature being 48.8°C and the hardness 300 ppm at a molecular ratio of 2 Ca:1 Mg. All the alkalis except borax decreased the amount of soaps required to form permanent suds when the carbon chain was longer than 14 C atoms. Some silicates showed to peculiar advantage with high molecular weight soaps, while only the polyphosphates gave any reduction with low molecular weights. The silicates usually increased in value with increasing alkalinity, but sometimes silicates of intermediate alkalinity were best. Both silicates and phosphates could be employed to prevent formation of hard lime-soap curds. The adverse effect of caustic soda and soda ash was not as evident with soaps of low molecular weight. The results showed that the effect of the individual soaps on the minimum required for formation of a permanent suds is

probably, though not certain, additive under conditions of like pH.

Steaming textiles. The Mathieson Alkali Works. Indian P. 33 557 (through *J. Sci. Ind. Research (India)*).

This invention comprises means for forming a series of accordion folds in the fabric for steam treatment.

Treatment of material by fluid. Williams. Indian P. 33 770 (through *J. Sci. Ind. Research (India)*).

Washing lubricants out. Kehren. Textilprüfanstalt M.-Gladback. *Melliand Textilber. 29*, 62 (Feb. 1948); *in German.*

Mineral-oil lubricants in piece-goods and yarns are hard to remove, and this difficulty is increased by the shortage of suitable emulsifiers and concentrated fat solvents. The compositions of commercial lubricants were investigated and methods were developed for removing the oils from yarns. The amount of lubricant used should be kept to a minimum. To remove mineral oils, the customary cold washing should be supplemented by a warm washing at 30-40°C, and the alkalinity of the washing liquor should be carefully controlled to prevent injury to the fiber, because wool is very sensitive to dilute alkali at elevated temperatures. Cloth should be doubled by bringing the selvedges together during passage through the warm bath to prevent defects.

DYEING AND PRINTING E

Apparatus for positioning fabrics to be printed on a table. Adolphe Breyant. French P. 929 244, July 7, 1947 (through *Bull. de L'Institut Textile*).

The selvedges of the fabric are made parallel in the grooves of the table by means of a frame supported on rollers, one of which provides a rolling mechanism for the apparatus on the table, and the other holds the cable down in the groove.

Applying vat dyestuffs to cakes of textiles. Imperial Chemical Industries of Australia and New Zealand Ltd. Australian P. 130 534, Apr. 11, 1946.

Even distribution of dye results from circulating a suspension of an unreduced dyestuff containing a dispersing agent dissolved therein, through the packages, gradually adding to the suspension a sufficiency of a water soluble inorganic salt (e.g., Glaubers salt) to cause substantially complete deposition of the dyestuff from the suspension

onto the material in the package, and thereafter reducing and subsequently oxidizing the vat dyestuff by any conventional method.

Binding of organic ions by proteins. Buffer effects. Irving M. Klotz & Jean M. Urquhart. *J. Physical & Colloid Chemistry 53*, 100-14 (Jan. 1949).

The effect on the binding of organic dyes to proteins has been examined in a series of buffer solutions. Phthalate and veronal were effective in displacing bound dye ions from their protein complexes. Glycine and phosphate showed very little effect and acetate, citrate, and bicarbonate were intermediate in effectiveness. Non-buffering anions such as nitrate and chloride exerted pronounced competitive effects in binding. The degree of binding at fixed pH fell with increase in protein concentration. Dye binding dropped rapidly in basic solutions.

Color-fast dyes for acetate rayon, especially vat dyes. Erich Herrmann. *Melliand Textilber. 29*, 99-100 (Mar. 1948); *in German.*

The previously dyed acetate rayon is tested for fastness to cross-dyeing by placing it in a bath containing Laventin HW and soap with a piece of white cloth made of viscose and acetate yarns and heating for 1 hr. The sample is then transferred to a solution of Glaubers salt and kept for 2 hrs. at 80°C. This treatment should leave the color of the previous dyed acetate rayon unchanged while either the white acetate or white viscose yarns will be dyed. Th use of Cellitone fast dyes, Cellitazoles and a few selected Naphthol AS combinations for cross-dyeing with acetate is discussed. Dyeing in the presence of 30% acetic acid gives good results but is too expensive. Dyeing with the sodium leuco-compound of vat dyes in the presence of acetic acid was found to be effective with a large number of indanthrene dyes. Details are given of the method. Colors which are lacking in other acetate dye groups can be applied in this way.

Effect of protein derivatives on dyes. Herbert Gerstner. *Melliand Textilber. 29*, 101-3 (Mar. 1948); *in German.*

The behavior of protein derivatives in dyeing fibers with weak acid dyes and in the dyeing of cellulose fibers with direct dyes and with leuco-compounds is reviewed; 25 references are cited. The published information is discussed in relation to the prevention of dye decomposition by boiling, protection of the fiber, equalizing the dis-

tribution of the dye, and improving the appearance of the dyed materials.

Emulsion of pigments. Geigy, S. A. French P. 930 809, Sept. 1, 1947 (through *Bull. de L'Institut Textile*).

An emulsion is prepared which consists of a pigment in a continuous aqueous phase and an organic liquid containing a binder as a disperse phase. Synthetic resins or substances which form resins on heating (urea-formaldehyde, thiourea, biuret, etc.) are used as binders. The organic liquid should be a solvent for the binder, (benzene, toluene, xylene, etc.). The process is applicable to textile printing.

Improvements in machines for printing on tables. Claudius Masson. French P. 925 890, Apr. 14, 1947 (through *Bull. de L'Institut Textile*).

In table printing, reference marks for the stops are provided on only one side of the table, and the carriage sometimes is out of place due to their lack on the other side. It is proposed to remedy this by applying a brake to the carriage on the side opposite the reference mark when the stencil is lowered. The brake is provided with 2 jaws acting in opposite directions and is controlled by a cable enclosed in a sheath. This apparatus prevents the application of the brake from displacing the carriage.

Improvement in machines for treating fabrics and other articles. Julien Dungler. French P. 928 333, June 2, 1947 (through *Bull. de L'Institut Textile*).

The fabric may be passed through an inert atmosphere (nitrogen), in an oxidizing atmosphere (air and oxygen), or in a reducing atmosphere (hydrogen).

Improvement in machines for treating fabrics of the kind called jiggers (jigs). Lucien Vallier. French P. 930 539, Aug. 11, 1947 (through *Bull. de L'Institut Textile*).

The device consists of paddles which rub and distort the fabric on both sides with the purpose of accelerating and regulating the action of the bath. These paddles have bevelled edges and are slightly convex in the transverse direction. They may be fixed or movable. When movable, they are driven in the opposite direction and at a linear velocity different from that of the cloth. The rubbing of the fabric by these paddles eliminates the bubbles of air and accelerates the surface reaction as well as the penetration of the dye.

Improvement in riders for frame printing. Jean

& Louis Benod. French P. 930 439, Aug. 11, 1947 (through *Bull. de L'Institut Textile*).

In the Lyonnaise printing system, the position of the riders is regulated transversely in relation to the printing table by means of a micrometric screw with a blocking screw for use after regulating.

Improving the properties of fibers and of dyeings by using hydrophobic melamine-formaldehyde compounds. A. Landolt. *Textil-Rundschau 3*, 108-12, 152-58 (May, 1948); *in German* (through *Bull. de L'Institut Textile*). Cf. TTD: *4*, 376-7.

The properties of a hydrophobic melamine-formaldehyde resin called product H are described. This substance dissolves in a small amount of water and is precipitated by the addition of more water. When the solution is acidified, it has the properties of a positively charged colloid. When applied to vegetable fibers, the resin imparts resistance to swelling, also to humidity, to shrinkage, to spotting by water, and to bad weather; it immunizes the fibers, improves the resistance of dyed fabrics to chlorine, and renders wool unshrinkable. Microscopic sections of fibers treated with this resin show that the melamine resin is well colored and that the resin could be detected at the interior of the fibers. According to the author, particles of resin penetrate the interstices of the fiber producing a transverse reticulation of the principal valence bonds of the cellulose, thus opposing the swelling of the fibers by water.

Light sources and colored objects. Ralph M. Evans. Color Control Dept., Eastman Kodak Co. *Illuminating Eng. 44*, 47-54 (Jan. 1949).

Color perception is strongly influenced by the source of light, and the subjective effect of a color varies considerably with color adaptation of the observer's eye to the color of the predominant light and with the presence of high-intensity lines of bands in the spectrum of the illuminant. These factors cause problems in color matching and similar exacting tasks of color perception. The clear and relatively simple discussion of such effects presented in this paper is applicable to problems in dyeing and related textile fields.

Machine for dyeing fabrics. Julien Dungler. French P. 928 331, June 2, 1947 (through *Bull. de L'Institut Textile*).

The layout of a system of vats and rollers is given. The fabric is fed into a central space in which equipment is provided for starting it on its course.

Pigment-dyeing of fabrics. Interchemical Corp.

Indian P. 37 174 (through *J. Sci. Ind. Research (India)*).

Preparation containing alkali sulfides useful in dyeing and printing textile fibers. Ciba Ltd. Indian P. 36 822 (through *J. Sci. Ind. Research (India)*).

Process and condensation product for improving the reactivity of cellulosic material towards substances having acidic properties, such as acid dyes. Gen. Aniline & Film Corp. Indian P. 34 681 (through *J. Sci. Ind. Research (India)*).

Process for dyeing nylon with acid dyes of limited solubility. Frank C. McGrew & Wm. H. Sharkey (to E. I. du Pont de Nemours & Co.). USP 2 459 831, Jan. 25, 1949.

A process for evenly dyeing nylon textile articles comprises immersing the nylon article, until the desired depth in shade is obtained, in an aqueous dyebath in which the coloring material is a salt of an acid dyestuff which dissociates in the aqueous dyebath to yield a dye anion concentration of at least 0.1 part per million but not greater than 50 parts per million, based on the weight of the dyebath.

Process for dyeing synthetic linear polyamide fibers. Geigy S. A. French P. 927 738, May 12, 1947 (through *Bull. de L'Institut Textile*).

Materials such as nylon are dyed by the usual method, then immersed in an acid bath containing an excess of a chromium salt. The dyed and chromated material is then treated with steam at 110-115°C., washed, rinsed, and dried.

Process for printing fibrous materials. Ciba, S. A. French P. 930 402, Aug. 4, 1947 (through *Bull. de L'Institut Textile*).

Printing emulsions are used consisting of a solution of alkali caseinate containing formaldehyde as the aqueous phase and an oily phase containing a dye and substances which harden with formaldehyde. The materials thus treated are dried and then treated again with an aqueous solution containing formaldehyde, potash alum, and acid, and finally dried.

Process for printing in relief. Maurice Eyraud & Michel Henry. French P. 928 487, June 2, 1947 (through *Bull. de L'Institut Textile*).

The appearance of embroidery or of molded metal is produced on a fabric by means of a colorless viscous solution on a vinylic resin. This solution may be colored by adding printing colors or metallic powders. By using luminescent powders and exposing the treated fabric to light, radiations visible in the dark can be obtained.

Process for printing textiles. (Source missing). Ger. P. 749 394, Nov. 1944. PB L 70147; frames 740-741. *Bibl. Sci. Ind. Reports 6*, 1110 (Sept. 19, 1947); Price: Enlargement print $1.50; *in German.*

Producing mineral khaki shades on cellulosic materials. Nabar & Daruwalla. Indian P. 37 446 (through *J. Sci. Ind. Research (India)*).

Protective action of sodium pyrophosphate on dyes when dyeing in the presence of iron. Paul Weyrich. *Melliand Textilber. 29*, 68 (Feb. 1948).

This is an account of practical experience gained in dyeing wool, cotton and rayon. Sodium orthophosphate was found to be effective in the presence of acetic acid in preventing iron compounds from adversely affecting the colors of certain dyes because iron phosphate is insoluble in acetic acid. However, the pyrophosphate was more effective. See also P. Rake, *Melliand Textilber. 28*, 312 (1947).

Recent developments in cotton dyeing. Frank M. MacFall, Armour Res. Foundation. *Cotton Trade J. 28* (International Ed., 1948-49), 163, 173.

In this review of developments in cotton dyeing, the Pad-Steam process, the Williams Unit, and the Multi-Lap machine are discussed. Also noted is the new dyeing technique developed in England by which a colloidal dyestuff is applied to fabrics and which utilizes a liquid metallic alloy of low melting point (150°F) to maintain the necessary temperature and to impart pressure to the fabric as it is drawn through the molten metal. The dye liquor floats on the surface of the molten alloy which is known as Cerrobend. Cerrobend does not stick to the fabric.

Reducing agents and dyestuff preparations containing them. Ciba Ltd. Indian P. 36 705 (through *J. Sci. Ind. Research (India)*).

Roller coverings, for use in printing and textile machinery. Dayton Rubber Co. Indian P. 38 984 (through *J. Sci. Ind. Research (India)*).

Ruler for placing the position stops on fabric printing tables. Adolphe Breynat. French P. 929 245, July 7, 1947 (through *Bull. de L'Institut Textile*).

This ruler carries a hook which clamps over the external flange of the rail and is so constructed

that the fixed protuberance automatically rests against the groove of the first stop while the adjustable protuberance rests in the groove of the stop, the position of which is to be determined. The ruler is graduated and the slide carries a vernier. Much greater precision is possible than by means of ordinary rulers.

THE CHEMICAL TECHNOLOGY OF DYEING AND PRINTING. Louis Diserens. Tr. by Paul Wengraf & H. P. Baumann. New York, Reinhold Publishing Corp., 1948. 485 pp.; Price: $11.00.

The 485-page book contains but 5 chapters: (1) Vat Dyestuffs, covering preparation of dyestuff pastes and fine powders; application printing with indigo; vat color printing methods; discharge printing of vat colors; resist printing of vat colors; dyeing with indigo; dyeing with vat dyestuffs; (2) Sulfur Dyestuffs, covering preparation of pastes and fine powders; dyeing and printing with sulfur dyestuffs; (3) The Indigosols, covering printing and dyeing methods with indigosols; (4) The Insoluble Azo Dyestuffs, covering dyeings and prints based on impregnation; special dyestuffs incorporating both naphthol and base; (5) Mordant Dyestuffs, covering types of mordants; mordant dyestuffs of vegetable fibers; mordant dyes on animal fibers. Numerous tables and charts appear throughout the volume.—*Textile Colorist.*

SPECIAL FINISHING F

Applying coating or impregnating agents to fibrous cellulosic materials. Am. Cyanamid Co. Indan P. 36 672 (through *J. Sci. Ind. Research (India)*).

The process comprises flocculating an aqueous dispersion of an impregnating agent in presence of fibrous cellulosic material by cationic melamine-aldehyde resin.

Coating composition and sheets coated therewith. Robt. E. Fay, Jr. (to E. I. du Pont de Nemours Co.). USP 2 459 874, Jan. 25, 1949.

A new coating composition which is flexible at low temperatures, has improved resistance to abrasion, is not tacky at high temperatures, and which is easily compounded, comprises as essential film-forming ingredients: (A) A copolymer of butadiene and acrylonitrile, the acrylonitrile content being between 30% and 50% of the copolymer, (B) halogenated polyethylene containing from 25% to 72% halogen, and (C) halogen-2-butadiene 1,3 plastic polymer. The coating is espe-

cially applicable to making upholstery for rough usage.

Coating of fabrics. E. I. du Pont de Nemours & Co. Indian P. 35 134 (through *J. Sci. Ind. Research (India)*).

A fabric is coated by applying one coat of a composition containing an elastomer to the fabric substrate, then applying a composition containing a chloroprene-acrylonitrile interpolymer, curing, and then halogenating.

Detection of hardenable synthetic resins in viscose fibers. R. Bernegger. *Textil-Rundschau 3,* 191-201, 225-36, 272-80 (June, July & Aug. 1948); *in German* (through *Bull. de L'Institut Textile*).

To determine the position of the deposit of the artificial resin (condensation product of melamine or urea with formaldehyde) in or on rayon fibers, the method developed for hardenable resins which liberate formaldehyde on hydrolysis is generally applicable. Tollen's solution (silver nitrate in aqueous ammonia) is used. The alkaline solution first causes hydrolysis of the resin, liberating formaldehyde. This reduces the silver compound, causing colloidal metallic silver to deposit on the resin layers. The reaction has been observed on fiber sections. It was watched under the microscope.

Estimation of 2:4 dinitro-α-naphthol and Martius Yellow in woolen fabrics. C. N. Tewari, S. C. Das Gupta & B. C. Bera, Technical Development Establishment Lab. (Stores) Kanpur. *J. Sci. Ind. Research (India) 7B,* 133-5 (Sept. 1948).

A spectrophotometric method of estimating the amount of the mothproofing agents 2:4 dinitro-α-naphthol, or its sodium or potassium salt known as "Martius Yellow (M. Y.)," in woolen fabrics is described in some detail. This method is based on the percentage of light of known wavelength which passes through an aqueous solution of the dye, and gives satisfactory results with fabrics which are free from water-soluble impurities and contain no other water-soluble dye or coloring except M. Y. In the presence of impurities such as are usually present in woolen felts the method is not successful. A modification of the Association of Official Agricultural Chemists method which gives satisfactory results with fabrics such as grey felts was developed. By this method, M. Y. impregnated felt, cut into small pieces, was extracted in a Soxhlet with alcohol until the alcohol syphoning over was colorless. The solvent was re-

moved by evaporation and the residue moistened with distilled water. 4N hydrochloric acid was added and the flask covered and heated to boil and N/15 titanous chloride solution added. The contents of the flask were boiled for 5 min., cooled with CO_2 gas and the excess of titanous chloride rapidly titrated wth N/30 ferric ammonium sulfate solution after adding 4% potassium thiocyanate solution as indicator.

Fabrics which fray. M. Weiss. *Rayonne*, 79, 81, 83, 85 (Apr. 1948); *in French* (through *Bull. de L'Institut Textile*).

Silks sometimes have a defect called fraying which results from the smooth structure of the yarns and which may be caused by the traction exerted by the colored yarn, rough treatment during finishing, or friction due to wear. It may be prevented by increasing the density of the yarns, but this would increase the price. The author proposes treatment with a solution of soap and resin, treatment with synthetic resins, use of a condensation product of methylaminoethane sodium sulfonate and glycol, use of a mixture of anhydrous aluminum phosphate, oxalacetic acid and water, or use of a new product called Syton. The author describes the results of some of these treatments and indicates some standards. There are 3 photographs and one diagram.

Fillers for low-pressure laminates. Leonard S. Meyer, Western Products Inc. *Product Eng. 19*, 146-7 (Feb. 1949).

This condensation of a paper presented at the Low Pressure Seminar of the Society of Plastics Industry compares various low-pressure laminating fillers, glass and nylon fabrics, on the basis of cost, strength, and weight. Other properties of fillers for special purposes are discussed, along with special treatments used on cotton and glass fiber and cotton fabric fillers.

Foil made from plastics, reinforced with a fabric, for waterproof clothing, awnings, parasols, marquees, etc. Dynamit A. G. Registered design 1516 128/81, Dec. 2, 1941. PB L 70411; frame 84. *Bibl. Sci. Ind. Reports 6*, 1118 (Sept. 19, 1947); Price: Enlargement print $1.50; *in German.*

Impregnation of packing materials made from cellulosic fibers. J. R. Geigy A. G. Indian P. 34 222 (through *J. Sci. Ind. Research (India)*).

Improvement in the manufacture of alginic products. Alginate Industries Ltd. French P. 932 135, Nov. 17, 1947 (through *Bull. de L'Institut Textile*).

Soluble alginates are produced and the formation of flocks is prevented by mixing alginic acid with a salt or an alkali (preferably $NaHCO_3$). The alginic acid, as free as possible of H_2SO_4, is dried in a finely divided state, screened, then washed, dried, and mixed with $NaHCO_3$, in finely powdered form to obtain the desired product.

Method of polymerization. David A. Swedlow (to Shellmar Products Corp.). USP 2 456 093, Dec. 14, 1948.

In the production of fibrous-resinous laminated products, frequently excess resin has to be used and a considerable quantity is lost during the polymerization of the laminate. The present invention claims to overcome this difficulty by the use of a cell which is made up of parallel sheets of rigid material separated from the sides of the cell by a separator made of a compressible material such as rubber, etc. In use, the fibrous material is impregnated with the resin and the formed laminates placed in the cell which is then closed, secured to prevent leakage of resin, and connected to a suitable vacuum pump, and evacuated to remove the air in the fabric and to create sufficient differential pressure to force the plates toward each other, thereby compacting the impregnated base and distributing the polymerizable material throughout the base. After evacuation, the assembled cell is heated or subjected to whatever means necessary to obtain polymerization.
LCL

Microbiological deterioration of organic materials: its prevention and methods of test. Edward Abrams. (Natl. Bur. of Standards Miscellaneous Publication 188, Nov. 1, 1948), Washington, U. S. Government Printing Office, 1948. 41 pp.; Price: 25¢.

The deterioration of textiles, leather, and other organic materials by mildew and rot is a major probem in the tropics, and is also important in many parts of the continental United States. Accordingly, it has seemed worthwhile to present the information on the subject that has been accumulated by the Natl. Bur. of Standards in the past several years, and to describe the methods currently used to ascertain the susceptibility of materials to mildew growth and to evaluate protective treatments. Part I has been written primarily for persons looking for general information on the cause and prevention of mildew damage. Part II is addressed more particularly to the technologist and the laboratory worker.—*Preface.*

Mildew and molds. Francis Tripp, New Bedford

(Mass.) Textile Inst. *Textile Bull. 74*, 80, 82-3 (July, 1948).

The characteristics of molds are reviewed briefly and compounds used as mildew-proofing agents are noted briefly.

New process for coating fabrics and making them impermeable. Soc. Generale de Constructions Electriques et Mechaniques. French P. 931 594, Nov. 3, 1947 (through *Bull. de L'Institut Textile*).

A coating consisting essentially of acrylic esters or metacrylic esters (methyl or butyl acrylates) which are slightly polymerized in solution in a plasticizer is applied to the fabric by means of calenders or similar machines used in the production of oil cloth.

Phenol-formaldehyde resins. Westinghouse Electric Corp. Australian P. 130 672, Dec. 18, 1945.

A phenol-formaldehyde resin having exceptionally low odor when fully cured comprises the reaction product of only 1.0 mol. of phenol and from 1.15 to 1.35 mols. of formaldehyde heated to 100°C in water as the reaction medium and refluxed for from 1.5 to 2.3 hours in the presence of an alkyl amine catalyst capable of catalyzing the reaction to the same extent in the same time as 0.45 to 0.55% of ethylene diamine based on the weight of the phenol. The refluxed product is then subjected to distillation at an absolute pressure of from about 0.2 to 0.01 atmospheres while at a temperature of above 100°C but not materially exceeding 150°C. The resin so formed may be combined with a fibrous material.

Polyamide fibers and mothproofing agents. (Perlon L and Eulan). O Drapal. *Melliand Textilber. 29*, 136-7 (Apr. 1948); *in German.*

Insect pests do not attack polyamide fibers, such as Perlon L, but this polyamide has a high affinity for Eulan, so that it is necessary to use large quantities of this mothproofing agent to protect blends of wool and Perlon L. Eulan has no injurious effect on Perlon. Data are given for the amounts of Eulan taken up by Perlon and by wool and for the tensile strength and extensibility of Perlon L fibers treated with Eulan.

Polyvinyl acetals ("Mowitals"). A. Voss. I. G. Farbenindustrie. PB 32907, Oct. 1930. 6 pp. *Bibl. Sci. Ind. Reports 3*, 938 (Dec. 27, 1946); Price: Microfilm $1.00; Photostat ~~$1.00~~ $1.75; *in German.* (Translation of this paper, PB 32907-T, available from Accurate Translation Service, 711 Woodward Building, Washington 5, D. C.; Price: ~~$2.00~~ $6.00).

"Mowitals" are obtained as acetals in the reaction of aldehyde with polyvinyl alcohols. If the reaction is performed in an aqueous solution water soluble products are obtained which can be used as textile aids, impregnating and sizing agents. If the reaction is performed in the presence of organic solvents the products will be soluble in organic solvents. "Mowitals" are highly elastic, heat resistant, waterproof, and resistant to chemical attack. They were tested for use as lacquers and plastic materials. Condensation products of polyvinylacetals which are insoluble in solvents and infusible are obtained by the action of aldehyde, especially formaldehyde, at temperatures above 100°C. Interesting condensation products are obtained if the aldehydes are simultaneously or successively reacted with polyvinylalcohols and such substances which combine easily with formaldehyde.

Preparation and utilizations of a textile dressing resistant to washing and boiling from the polymerization product of styrene and maleic anhydride. A. Voss, I. G. Farbenindustrie. PB 32912, Mar. 1931. 4 pp. *Bibl. Sci. Ind. Reports 3*, 939 (Dec. 27, 1946); Price: Microfilm $1.00; Photostat $1.00; *in German.* (Translation of this paper, PB 32912-T, available from Accurate Translation Service, 711 Woodward Building, Washington 5, D. C.; Price: $4.00).

About 20% acetone is added to the styrene as a solvent for the maleic anhydride. The copolymer is dissolved in dilute ammonia to give a 10% aqueous solution. The solution is dried after addition of 5% butanol based on resin content. This product can be used as a textile dressing as it is fairly resistant to boiling water or soap solution. It was found, however, that its ammonium salt, treated with formaldehyde, is a dressing having absolute resistance to boiling, very promising for hot stiffening and for impregnation of white shirts, etc. It may replace shellac which must be dissolved in borax or spirits, and which has some intrinsic color.

Preservation of hard fibers against mold and fungoid growth. F. Fisher, Chemotex, Ltd. *Fibres, Fabrics & Cordage 15*, 331-2 (Oct. 1948).

As the result of war-time tests to discover an economical rotproofing agent for hard fiers, it was found that the acyl derivatives of penta-chlorphenol had none of the disadvantages of the pure phenol while the toxic properties with respect to molds were retained in full. These compounds

are colorless substances capable of being incorporated in both water-in-oil and oil-in-water emulsions, thus making it possible to incorporate in the finished emulsion both waterproofing and rotproofing properties. The acyl derivatives are further characterized by ease of application to ropes, etc.

Process for animalization of natural and artificial fibers, threads, ribbons, fabrics, and cellulose in other forms. I. G. Farbenindustrie A. G. Patent application I 65238 IVc/29b. PB 31530, July, 1939. 5 pp. *Bibl. Sci. Ind. Reports 3*, 212 (Oct. 18, 1946); Price: Microfilm $1.00; Photostat $1.00; *in German.* (Translation of this paper, PB 31530-T, available from Research Information Service, 509 5th Ave., N. Y. 17, N. Y.; Price: $12.00).

The existing method of animalization of cellulose fiber by application of condensation products containing sulfur and nitrogen is modified. The component compounds, for example isocyanates, isothiocyanates and imines or amines, are applied individually and condensation of the insoluble product takes place on the fiber itself.

Process for animalizing natural or artificial fibers, threads, ribbons, etc. I. G. Farbenindustrie A. G. Patent application I 66261 IVd/8m. PB 31633, Jan. 1940. 3 pp. *Bibl. Sci. Ind. Reports 3*, 221 (Oct. 18, 1946); Price: Microfilm $1.00; Photostat $1.00; *in German.* (Translation of this paper, PB 31633-T, available from Research Information Service, 509 5th Ave., N. Y. 17, N. Y.; Price: $4.00).

Dye-retaining quality of wool may be imparted to cellulose and other artificial fibers, by the addition of certain compounds, obtained by the reaction of bases and aromatic isocyanates. Formation of the animalizing compounds takes place on the fiber itself.

Process for improving textile materials. N. V. de Bataafsche Petroleum Maatschappij. French P. 926 660, Apr. 21, 1947 (through *Bull. de L'Institut Textile*).

Yarns or fabrics are made wrinkleproof or less subject to wrinkling by treating with water-soluble substance prepared by the reaction of an alkaline substance with the reaction products of natural rubber, gutta-percha, balata, etc. with inorganic acids. Then the textile is exposed to an inorganic acid or acid anhydride. This process avoids the use of substances which attack the fabric and the application of high temperatures.

Process for making a material to replace oil-cloth, leather cloth, or leather-like cloth and similar articles. Senechal. (The Sons of Emile). French P. 925 955, Apr. 14, 1947 (through *Bull. de L'Institut Textile*).

A continuous coating of paper is applied to a fabric backing by the use of ordinary adhesives. To make oil-cloth, the paper is printed before or after its application to the backing, then varnished. For leather-like articles, the paper is simply coated, then grained and varnished.

Process for producing damasse effects on textiles. Heberlein & Co., A. G. French P. 925 364, Mar. 24, 1947 (through *Bull. de L'Institut Textile*).

Permanent decorative crimping or calendering effects are produced by applying thickeners which do not cause an undesirable permanent stiffness on the printed places; cellulosic ether, which does not react with formaldehyde, or some of the water-soluble cellulosic ethers are used. The flour of Carob beans or similar products are used for the acid solutions of formaldehyde, and amides of N-oxymethylic acid and the quarternary compounds of the lower aliphatic cholormethyl ethers are used as substances which liberate formaldehyde. Acid catalysts are also used. Dyes and pigments may be used with the thickeners. The fabrics so produced may then be finished.

Production of coated or sized fabrics. Soc. Rhodiaceta. French P. 926 671, Apr. 21, 1947 (through *Bull. de L'Institut Textile*).

Polyvinyl chloride fabrics are coated with a solution of polyvinyl chloride containing a quantity of a non-solvent liquid insufficient to reduce the mechanical strength of the fabric appreciably. These coating may contain pigments, dyes, and plasticizers.

Protecting textiles from biological attack. E. B. Higgins. Australian P. 130 584, July 2, 1946.

A method for the treatment of textile materials to provide protection against biological attack, consists in applying to the textile fiber, a solution of an acyl derivative of a halogenated phenol or cresol in a nonaqueous solvent in which the derivative is sufficiently soluble for the solution to have the requisite toxic properties. The treatment may be carried out before or after spinning the fiber into yarn but is preferably applied to piece goods immediately following "dry" cleaning and using as solvent the same as employed for the dry cleaning. The following are given as preferred derivatives: acetyl, palmityl, stearyl, lauryl, capryl, oelyl, or salicyl derivatives of pentachlorphenol.

Rendering textile materials water-repellent. Imperial Chemical Industries Ltd. Indian P. 36 463 (through *J. Sci. Ind. Research (India)*).

Resistance to weathering of cotton duck treated with certain compounds of iron, chromium and copper. Muriel W. Weatherburn & C. H. Bayley, Natl. Research Laboratories, Ottawa, Canada. *Can. J. Research 26,* Section F, 24-35 (Jan. 1948).

Unbleached cotton tentage duck was impregnated with chromic oxide, copper carbonate, and ferric oxide, both singly and in mixtures, each metal being present as approximately 1% of metallic oxide, and also as naphthenates of the same concentration. The rot resistance of the samples was determined by the loss in breaking strength on soil burial after leaching in water and after outdoor weathering for 4 months respectively. Photochemical degradation on weathering was determined by loss in breaking strength and by increase in cuprammonium fluidity. The decrease in metal content was also measured. Samples treated with inorganic Cr and Fe showed no resistance to soil burial and the naphthenates showed only slight resistance. Copper treatments produced appreciable resistance to soil burial. The resistance resulting from treatment with Cr plus Cu and with Cr plus Cu plus Fe mixtures was greater than that from Cu plus Fe treatments. On the whole, the inorganic treaments were more effective against soil burial after leaching that the organic, but the organic were more effective against weathering in burial. All losses of Cr on weathering were negligible while Fe losses ranged from zero to 34% and Cu losses from 85 to 100% when alone or 34-54% when the Cu was in the presence of Cr or Cr plus Fe. Similar trends were observed with the naphthenate treatment but the losses were much lower in all cases, ranging from no significant loss up to 48% loss.

Rot resistance of cotton duck treated with chelate copper compounds. W. I. Illman, G. Semeniuk, A. C. Neish & G. A. Ledingham, Natl. Research Council, Ottawa, Canada. *Can. J. Research 26,* Section F, 311-17 (Aug. 1948).

Thirteen organic compounds capable of forming chelate complexes were used to fix copper in cotton duck. Their rotproofing was determined by loss in tensile strength during soil burial. The compounds tested in order of decreasing effectiveness were, cupferron, 8-hydroxyquinoline, 1-nitroso-2-naphthol, dimetylglyoxime, salicylaldoxime, glucose oxime, diphenyl-thiocarbazone, rhodanine, benzoin oxime, S-diphenylcarbazide, acetoin oxime, and fructose oxime. Copper complexes formed with cupferron and 8-hydroxyquinoline possessed rot resistance far superior to those of copper naphthenate or any other compounds tested.

Silver impregnation. Geo. Schwarz. USP 2 459 896, Jan. 25, 1949.

This invention provides a method for depositing silver in a highly reactive form on fibrous materials capable of swelling. The process comprises the reducing, in contact with the organic fibers on which the deposit is to be produced, an aqueous solution of a silver compound providing silver ions, by reacting the solution with an amount of alkylolamine sufficient to effect such reduction. Cotton fibers, gauze and nylon fibers may be treated by this process to produce a variety of products suitable for use as bacteriacidal and antiseptic bandages, filters, etc.

Silver impregnation. Geo. Schwarz. USP 2 459 897, Jan. 25, 1949.

This invention provides a method for depositing highly dispersed colloidal silver possessing outstanding bacteriacidal and fungicidal properties on fibrous materials. The process consists of reducing, in contact with the surface on which the deposit is to be produced, an aqueous solution of a silver compound providing silver ions, by reacting the solution with enough of a heterocyclic secondary amine to effect the reduction. The heterocyclic secondary amine may be selected from the group consisting of piperidine, morpholine, thiomorpholine, pyrolidine, their alkyl and alyklol substitution products, and mixtures thereof. Fibers, fabrics, charcoal, pumice, wood, sand, bristles, etc. may be impregnated by this method.

Textile finish. Anon. *Chem. Eng. News 27,* 458 (Feb. 14, 1949).

A textile finish which requires no curing, yet which is said to last through a number of launderings or dry cleanings, is being manufactured by American Polymer Corp. Called Polyco 337, it is a stable aqueous resin dispersion of a fully polymerized multipolymer specifically formulated to give maximum stiffness with minimum cost. Its several monomeric constituents are balanced to yield the properties desired in a permanent launder and dry-cleaning resistant finish. Currently sold only to manufacturers of textile finishes, the product comes as a water-thin material containing 35% resin solids. It requires no high temperature curing because the evaporation of the water content fully sets the polymerized resin. No sol-

vents are used in its manufacture, it absorbs no chlorine on bleaching, and its nonflammable and nontoxic qualities recommend it for use under almost any conditions. It is compatible with starches, dextrins, gums, and other conventional textile sizing agents, and application requires no special operations or special machines.

Treatment or preparation of textile and other materials and articles to enable them to resist penetration or attack by insects. The Geigy Co. Ltd. Indian P. 31 887 (through *J. Sci. Ind. Research (India)*).

Treatment or preparation of textile and other materials and articles to enable them to resist penetration or attack by insects. The Geigy Co. Ltd. Indian P. 33 110 (through *J. Sci. Ind. Research (India)*).

Use of textile fabric impregnated with a starchy substance as a material for documents. W. J. Peters. W. T. Peters & Cie. Ger. P. 749 124, Nov. 1944. PB L 70147; frames 255-257. *Bibl. Sci Ind. Reports 6,* 1102 (Sept. 19, 1947); Price: Enlargement print $1.50; *in German.*

Drawings included.

Wrinkle-resistant cotton cord. Anon. *Chem. Eng. News 27,* 644 (Feb. 28, 1949).

Wrinkle-resistant cotton cord which is also shrink-resistant was shown by Avondale Mills at the Natl. Wash Apparel Show in Chicago recently. Treated with American Cyanamid Co.'s Superset resin, it is said to be highly resilient and resists crushing, rumpling, and wear-wrinkling even under humid conditions. Garments made of the Superset resin-treated cord have been wrinkle-resistant. Greater resistance to dust, soot, and soiling was also reported, and the finish intensifies color which adds to fresh appearance.

TESTING AND MEASUREMENT G

Brief report on the I. S. O. meeting. Frederic Bonnet, Am. Viscose Corp. *Papers Am. Assn. Textile Technologists 4,* 18-21 (Dec. 1948).

Included in this report on the meeting of the International Organization for Standardization, Technical Committee No. 38 on Textiles, are a brief summary of the discussions and conclusions reached and a list of the personnel composing the U. S. Delegation. Definitions, terminology, and standards were discussed. (See also TTD: *6,* 147).

Methods for the quantitative chemical analysis of mixtures of rayon staple and cotton, or casein wool and sheep wool. O. Kirret. PB L 73874;

frames 4461-4493, 1940. *Bibl. Sci. Ind. Reports 6,* 1083 (Sept. 19, 1947); Price: Enlargement print $3.50; *in German.*

Clothing and fabrics G 1

Dry cleaning tests endorse Celanese plastics for buttons. Anon. *Celanese Plastics 6,* 2 (Jan. 1948).

Tests of the National Institute of Cleaning and Dyeing showed damage from heat and dry cleaning solvents to buttons of polystyrene and acrylic resins. Cellulose acetate and nitrate withstood these and other hazards of dry cleaning well. Limitation of polystyrene use to clear "glass-like" buttons was recommended.

Instruments and instrumentation G 2

Automatic device for testing the resistance to abrasion of insulations made from lacquer, plastics or textiles, and for measuring the bending strength of fibers and their fabrics. A. E. G. Registered design 1519 285/42k, Dec. 9, 1941. PB L 70411; frames 758-761. *Bibl. Sci. Ind. Reports 6,* 1126 (Sept. 19, 1947); Price: Enlargement print $1.50; *in German.*

Drawing included.

Calculating the weight of cloth in the English and metric system. F. Walz. *Melliand Textilber. 29,* 85-7 (Mar. 1948); *in German.*

Formulas and conversion factors are given which should enable weavers to handle American Commission orders without reverting to the English yarn count.

Cord testing apparatus. Irven B. Prettyman, Geo. P. Bosomworth & Duncan C. Milner (to Firestone Tire & Rubber Co.). USP 2 459 738, Jan. 18, 1949.

Means are provided for testing a number of cords under substantially identical conditions under controlled temperature and humidity for elongation or creep. The cords are adjusted to the same length at the beginning of the test and elongation is determined for each cord by means of a dial gage micrometer as the test progresses. The apparatus is especially adapted to studying the elongation of tire cords such as takes place after a short period of tire use.

Device with longitudinally movable disc for testing the resistance to scraping of cloths such as textile fabrics, balloon materials, etc. Koetitzer Ledertuch U. Washswerke A. G. Registered

design 1519 374/24k, Apr. 22, 1942. PB L 70411; frames 772-774. *Bibl. Sci. Ind. Reports 6,* 1126 (Sept. 19, 1947); Price: Enlargement print $1.50; *in German.*

Drawing included.

Mixtures of fibers. J. de Schacht. *Rayonne,* 89, 91, 93, 95, 97, 99 (June, 1948); *in French* (through *Bull. de L'Institut Textile*).

The operation of an electronic dynameter which gives the load-elongation curve directly is described. The effects of various materials entering into the composition of yarns on elongation and break was investigated. There are 3 graphs and 3 diagrams.

New horizontal rope tensile tester with electronic control. Anon. *Cord Age 50,* 10, 22 (Dec. 1948).

A new horizontal tensile testing machine, for long specimens of rope, cable, etc., manufactured by the Baldwin Locomotive Works, is designed to test long specimens with high elongations at loads upto 120,000 lbs. Specimens from ¼ in. to 4 in. in diameter with a maximum stretched length of 25 ft. under full test load may be accommodated. Minimum length of specimens is 2 ft. An electronic control permits driving speeds of ⅜ in. to 18 in. per minute. At least 6 in. per minute is available at full load. The load-sensitive element is the Emery hydraulic cell.

QUALITATIVE AND QUANTITATIVE ANALYSIS OF MIXTURES OF FIBERS. Zurich, A. G. Gebr. Leemon & Co., 1945. 124 pp.; *in German.*

This book gives a detailed description of microscopic techniques, illustrated by excellent microphotographs of the more important fibers. Much of the information is assembled in the form of tables.—*Bull. de L'Institut Textile.*

TEXTILE MILLS H

Estimating mill costs—a necessity of the times. H. Kiessling. *Melliand Textilber. 29,* 124-5 (Apr. 1948); *in German.*

Methods of recording costs are described and the advantages of regular audits are emphasized. The author also expresses his views concerning the future of the German textile industry.

ELECTRONIC CONTROL OF MOTORS. Chas. Nadai & J. Noel. Paris, Dunod, 1948. 35 pp. *In French.*

The control of motors by means of the thyratron and its application is described and illustrated with 26 diagrams and graphs.—*Bull. de L'Institut Textile.*

FLAX RETTING WITH AERATION. A process of reusing an industrial waste water. Water Pollution Research Technical Paper No. 10. London, H. M. Stationery Office, 1948. 146 pp. Price: 3s net.

In August 1941, the Water Pollution Research Laboratory was asked by the Ministry of Supply to assist in dealing with the problem of disposal of the polluting waste waters produced by the methods of retting then in use in England, Scotland and Wales. A full account of the work they carried out has now been published by H. M. Stationery Office. . . . The main experiments took place in the re-use of retting liquors, by treating the liquor continuously by passage through percolating filters or by aeration. The filtration process produced a fiber of good quality but required an area of about 4,050 sq. ft. of filter 6 ft. deep for four 4-ton tanks. The aeration processes also produced a good quality fiber and a standardized aeration process was eventually evolved and has been adopted by all English flax processing factories.—*Fibres, Cotton & Cordage.*

New textile machines are ahead. Anon. *Fortune 39,* 129-32, 134, 136, 138-9 (Feb. 1949).

In this discussion of new textile machinery, the Warner & Swasey Pin Drafter, the Warner & Swasey-Sulzer loom, and the development of worsted spinning on the American system are noted. An account is given of the development of these machines.

Research for the solution of the problem of air conditioning requirements for the textile industry. O. Oldenhage. PB L 73606; frames 4833-4863, 1939. *Bibl. Sci. Ind. Reports 6,* 1080 (Sept. 19, 1947); Price: Enlargement print $3.50; *in German.*

Simple method for controlling the productivity of a machine. Werner Bartram. *Melliand Textilber. 29,* 163-4 (May, 1948); *in German.*

The productivity is defined as the ratio of hours in operation to total hours, and may be expressed in terms of revolutions during the work period divided by total number of revolutions possible during the period. The construction of a diagram for the graphical determination of efficiency is described.

Transformers and their connections. 1 & 2. Jas. T. Meador. *Textile Bull. 74,* 78, 80, 82 (Oct. 1948).

This discussion of transformers and their uses is based on the actual experience of mills. Data are

given on a number of problems and their solution.

TREATMENT AND DISPOSAL OF INDUSTRIAL WASTE WATERS. Department of Scientific and Industrial Research. London, H. M. Stationery Office. Price: 12/6d ($3.65 U.S.A.)

[This] is the first book to be published in Great Britain on the subject for some 35 years. . . . In 1927 the Department of Scientific and Industrial Research set up the Water Pollution Research Laboratory to investigate any matters affecting the quality of water and to act as a source of information on methods of purifying polluting liquids; the book now published describes much of the work which the Laboratory has carried out since its formation but also includes the chief results of the work of others in many parts of the world. [A discussion of the treatment and disposal of textile wastes is included.]—*Sewage Works Eng.*

Weaver's wages as a device for controlling the effective output of the loom. Max Paul. *Melliand Textilber. 29,* 87-8 (Mar. 1948); *in German.*

Given balanced and well-adapted wage rates, the wages earned by a weaver serves as a rough check on the effective output of the looms. However, experience has shown that the loom output decreases in proportion to the number of looms tended by a weaver working on the 2- to 6-loom system. The average hourly wage set by the wage schedule is achieved by a weaver working on piecework only when he is not burdened with routine work necessary to keep the loom in operation. The time required by these duties should not exceed 50% of a weaver's working time, calculated on the total number of loom tended.

CHEMISTRY AND PHYSICS OF TEXTILE MATERIALS I

Absorption of copper salts by vegetable fiber and various rayon fibers. R. Haller. *Melliand Textilber. 29,* 168-9 (May, 1948); *in German.*

Previous work on this subject is reviewed. Filaments which had been impregnated with copper were treated with solutions of sodium perborate, sodium percarbonate, hydrogen peroxide, and sodium hypochlorite. The pure blue color of the copper compound was changed to yellow by perborate, to green by percarbonate, to brown with H_2O_2, but was unchanged by the hypochlorite. No evolution of gas was observed, except with H_2O_2. Pure $Cu(OH_2)$ showed no change in color when suspended in aqueous solution with these oxidizing agents. It was also found that Fehling's solution would not pass through a semipermeable membrane. Its behavior in contact with textile fibers is therefore analogous to a substantive dye. When fibers which had been treated with Fehling's solution were placed in solutions of perborate, percarbonate, and H_2O_2, no degradation took place, but in the presence of dilute NaOCl, rapid degradation, with no change of color, was observed.

Behavior of textile filaments on pressing between rollers. Wolfgang Bobeth. *Melliand Textilber. 29,* 151-7 (May, 1948); *in German.*

The apparatus used consisted of a steel measuring roller against which 2 smaller rollers of cork or hard rubber are pressed by means of an adjustable counterweight. Natural horsehair, synthetic horsehair made from Styroflex and viscose, Tiolan yarn, and metal wires were elongated, whereas rayon and rayon staple, cotton and flax yarn, natural silk, nylon and artificial horsehair prepared from polyvinyl derivatives were shortened by passing between the rollers. The strength and the elasticity of practically all of the yarns were lowered by the roller pressure, while their extensibility was greatly increased. The shortening of the rayon yarn was directly proportional to the optical birefringence and to the orientation. The effect of roller pressure on the elongation was also measured. The results are discussed in relation to the chemical structure of the various materials investigated.

Comparative physical experiments on natural silk and rayons. Walter Rauch. *Melliand Textilber. 29,* 185-90 (June, 1948); *in German.*

Data are given on the specific gravity of fibers as determined pycnometrically in toluene, specific resistance, per cent absorption of water vapor, the modulus of elasticity, and on the effect of irradiation with ultraviolet light on breaking strength. These show that the electric conductivity for natural silk and nylon are of the same order of magnitude, but the modulus of elasticity, the absorption of water vapor and the effect of ultraviolet light are quite different. These differences are explained as due to the difference in fine structure.

Composition and structure of wool and hair and changes in their form. A. Schnitzler. *Seifen-Ole-Fette-Wachs 74,* 11-13, 37-9, 59-61 (Jan., Feb., Mar. 1948); *in German* (through *Bull. de L'Institut Textile*).

A review is given of recent work on wool and on

human hair. A reference is cited to a paper on the theory of "permanent waves" in human hair (*Hairdressers Weekly J. 3*, I, 1931 ff.).

Contributions to the methylation of cellulose and starch. A. Boppel. PB L 74121; frames 8101-8129, 1939. *Bibl. Sci. Ind. Reports 6*, 1079 (Sept. 19, 1947); Price: Enlargement print $3.00; *in German.*

Introduction of amino groups into cellulose. John D. Guthrie (to U. S. of Am.). USP 2 459 222, Jan. 18, 1949.

Cellulose textiles do not ordinarily dye well with acid dyes. It is known that amino groups may be introduced into cellulose, and that the cellulose textiles, such as cotton or viscose rayon textiles, thereby be rendered capable of fast dyeing with acid dyes. According to this invention, the cellulose is wetted with an aqueous solution of sodium hydroxide (mercerization strength of about 25% preferred), containing also 2-aminoethylsulfuric acid (preferably about 10%). The treated cellulose is heated at a temperature from 70° to 100°C for a minimum period from 40 min. to 9 hrs., the higher temperatures being used with the shorter periods, the preferred temperature and period being about 100°C and about 40 min., following which the cellulose is washed to remove the sodium hydroxide. Nitrogen up to about 0.60% is readily introduced by this procedure, and the treated fabric dyes darkly and fast with acid wool dyes. The 2-aminoethylsulfuric acid is readily produced by reacting the relatively cheap products, fuming sulfuric acid and ethanol amine.

New investigations on starch. Kurt H. Meyer & P. Bernfeld. *Melliand Textilber. 29*, 165-8 (May, 1948); *in German.*

Recent work on starch is reviewed and some data are given on the molecular weight of various fractions of amylose Amylopektin and lichenia as determined by a method developed by Meyer and Noelting, *Experentia 3*, 370 (1947). These data show that an amylose fraction of very high molecular weight occurs in corn starch, but not in potato starch, wheras the average molecular weight of the amylopectin of potato starch is much higher than that of the amylopectin of corn starch. This explains certain differences in the behavior of pastes made from these 2 kinds of starch. The structure of amylopectin and the physiochemical properties of starch solutions and sizes are also discussed.

Polyethylene terephthlate and its early development. D. V. N. Hardy, Chemical Research Laboratory (Teddington). *J. Soc. Chem. Industry 67*, 426-32 (Nov. 1948).

This paper reports laboratory preparations and studies of polyethylene terephthalate, a fiber-forming polyester recently announced by the Calico Printers' Association and Imperial Chemical Industries (ICI) under the name "Terylene." Terephthalic acid produced from p-cymene by nitric acid and permanganate oxidation, was esterified with methanol and the purified ester reacted with ethylene glycol (lithium or magnesium catalyst) in 2 stages in glass or stainless steel apparatus. Extrusion of molten ester into filaments by nitrogen pressure failed because of bubble formation and also polymer degradation. Good filaments were, however, extruded from the preparation apparatus. Cold-drawing, to 4 times the original length, strengthened the filaments and made them opaque, apparently because minute gas bubbles were formed. The maximum strength of the fiber was 5 g per denier (since exceeded in Terylene made by ICI) and extension at break was about 12%. Water absorption of the fiber was low, but its dielectric properties were not outstanding and dyeing may be troublesome. Since the properties were good and preparation in metal apparatus was successful, industrial development was undertaken by ICI.

Properties and the formation of mechanically modified high polymers. Erwin Steurer. *Melliand Textilber. 29*, 127-30 (Apr. 1948); 169-70 (May, 1948); *in German.*

The results of previous investigations of very fine grinding of substances such as cellulose, starch, polystyrol, etc., are summarized. The grinding methods used, the breaking down of the structure and recrystallization, as determined by x-rays, dilatometric measurements, and calorimetric measurements are discussed. Decomposition by grinding is compared with thermal decomposition, and the energy required for grinding is compared with the molecular energy of the ground substance. The general conditions for the mechanico-chemical modifications of high polymers is then summarized. There are 15 references.

Some recent developments in cotton research at the Southern Regional Research Laboratory, New Orleans. Walter M. Scott, Director. Mimeographed Bull. AIC-215, Nov. 16, 1948. An address presented before the meeting of the Textile Institute, New York, N. Y., Nov. 1948. 11 pp.

Work on cotton tire cord, preservation of cotton against degradation, the production of water-re-

sistant cotton fabrics which become self-sealing when swollen by water, the development of new properties in cotton through chemical modification (introduction of amino groups into the cellulose molecule) and cotton processing are discussed.

Spectrophotometric determination of acetaldehyde in mono-vinyl acetate. Ingvar Jullander & Kurt Brune, Mooch Domsjo A. G. Ornskoldsvik, Sweden. *Acta Scandinavica 2,* 204-08 (1948); *in English.*

Since in the polymerization of mono-vinylacetate, of possible use in synthetic fibers, the presence of acetaldehyde decreases the molecular weight of the poly-vinylacetate obtained, it is of interest to have available reliable and sensitive methods for determination of acetaldehyde in vinyl acetate. Physical methods are preferable to chemical because whenever vinyl acetate is brought into contact with water there is always the danger of saponification of the ester and subsequent increase in the aldehyde concentration. Acetaldehyde was determined successfully spectrophotometrically by ultraviolet absorption with a Beckmon Spectrophotometer Model DU. All measurements were made at room temperature with a cell thickness of 1.004 cm. The accuracy of the method is found to be about 0.1 g/l. The minimum detectable amount is estimated to be a few thousandths of a percent.

Stabilization and preservation. Experiments on cellulose, oils, citrus fruits and eggs. J. Maerkl. PB L 73840; frames 1099-1102, 1938. *Bibl. Sci. Ind. Reports 6,* 1082 (Sept. 19, 1947); Price: Enlargement print $1.50; *in German.*

Styrene polymerization in a magnetic field. J. E. Leffler & M. J. Sienko, Cornell Univ. *J. Chem. Physics 17,* 215-16 (Feb. 1949).

The writers suggest that the decreased rate of polymerization of styrene to methanol-insoluble polystyrene in a strong external magnetic field found by German research, is due to the orienting of the reacting molecules and the associated restriction of the mobility of the molecules.

Swelling of cellulose xanthate gels in dilute salt solutions. D. Vermaas & J. J. Hermans, Laboratory for Cellulose Research of the AKU and Affiliated Companies, Utrecht (Netherlands). *Rec. trav. chim. 67,* 983-97 (Dec. 1948); *in English.*

A theory is developed connecting the degree of swelling of a polymer network bearing ionogenic groups with the electrolyte concentration in the swelling medium. It is applied to the swelling of

cellulose xanthate gels in neutral salt solutions. The experimental work was done on isotropic cylindrical cellulose xanthate filaments spun from ordinary viscose in a 1.1 m ammonium sulfate bath. The swelling behavior of the gels supported the conclusion that the network consisted of short chains. Also, the dependence of swelling on the valence of the ions in the electrolyte, and especially on the xanthate ratio, seemed to prove the correctness of the assumption that Donnan equilibria played a fundamental role in the swelling behaviors of the xanthate gel.

Synthesis of disulfide cross links in polyvinyl alcohol and cellulose derivatives. E. F. Izard & P. W. Morgan, E. I. du Pont de Nemours & Co. *Ind. Eng. Chemistry 41,* 617-21 (Mar. 1949).

Sulfur-containing cross links of several types were introduced into polymer chains of cellulose esters and polyvinyl alcohols by reactions so mild as to cause little polymer degradation. The cross-linked products, as films and fibers, were insoluble in organic solvents and not fusible below their decomposition points. Cross linking as frequent as one link per 5 anhydroglucose units did not embrittle the cellulose derivatives. This work extends and consolidates the knowledge of the behavior of cross-linked polymers such as occur in some fibers.

Temperature sensitivity of the system plasticizer-polymer. H. Jones, Geigy Co. *J. Soc. Chem. Industry 67,* 415-20 (Nov. 1948).

The "viscosity theory of plasticizer action" indicates that, for minimum temperature sensitivity of a plastic, the plasticizer should be low in viscosity (hence used in low concentrations) and low in temperature coefficient of viscosity. This theory has been supported by electrical data, and this paper gives further evidence for it from mechanical tests of types giving stress-strain data and of types giving energy dissipation data. The mechanical tests are less accurate than the electrical tests of types giving stress-strain data and of ally confirm the value of the theory in predicting temperature sensitivity of stable polymer-plasticizer mixtures such as would be employed for textile fibers.

ORGANIC REAGENTS. John F. Flagg. New York, Interscience Publishers, 1948. 300 pp.; Price: $6.00.

The objective of this book is to describe the various organic reagents (precipitants) used in gravimetric and volumetric analysis, and to indicate the type of analytical procedure in which they may be used to advantage. This is the fourth in a

series of monographs on analytical chemistry and its applications.—*Paper Trade J.*

THE SYSTEMATIC IDENTIFICATION OF ORGANIC COMPOUNDS. Ralph L. Shriner & R. C. Fuson. New York, John Wiley & Sons, 1948. 370 pp.; Price: $4.00.

Among the subjects covered in this laboratory manual are: identification of unknowns; preliminary examination; determination of physical properties, qualitative analysis of the elements; the solubility classes; the preparation of derivatives; separation of mixtures; and the interpretation of experimental data.—*Paper Trade J.*

TEXTILE ANALYSIS. S. R. Trotman. London, Charles Griffin & Co. Ltd., 1948. 302 pp. Price: 28s.

This, the second edition of a standard work, covers the identification and analysis of fibers, physical tests, and the analysis of dyestuffs, oils, bleaching agents and finishes. Though produced primarily for textile chemists, the descriptions of the analytical methods employed in textile technology will be found useful by an even wider field of readers.—*Fibers, Fabrics & Cordage.*

TEXTILE EDUCATION AND RESEARCH J

Under the microscope; laboratory solves India's cotton problems. D. L. Sen, Technological Laboratory, Matunga, Bombay. *Cotton Trade J. 28* (International Ed., 1948-49), 126-8.

The work of the Technological Laboratory of the Indian Central Cotton Committee is described and discussed. The main function of the laboratory is to carry out tests on new strains and varieties of cotton developed by breeders, and to undertake investigation and research on fundamental fiber properties and spinning qualities of Indian cottons. Ginning problems are also studied.

Scope of use-development work in textiles. Henry A. Thomas, Courtaulds Ltd. *Papers Am. Assn. Textile Technologists 4*, 34-46 (Dec. 1948).

In a lecture, the Use-Development Organization of Courtaulds Ltd. is described and discussed. The general purpose of the U. D. O. is to bridge the gap between the results of research work and their commercial utilization. The organization and functions of the U. D. O. are illustrated by 3 charts.

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Canadian patents may be obtained from the Commissioner of Patents, Ottawa, Canada. An estimate of the cost of a patent should be obtained in advance of the order as patents are available only as manuscript or photostatic copies.

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